

Network Node Pilot Project

Beta Phase:

Report on Project Results and Next Steps

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Appendix 1. Definitions and Abbreviations of Terms

ADO – ActiveX Data Objects is database connectivity tool based on Microsoft's ActiveX technology.

ASP – Active Server Page is a server-side scripting technology that can be used to create dynamic and interactive Web applications.

Beta Node – Refers to the Nodes that were developed as part of the Beta Phase.

Blueprint – The Blueprint for a National Environmental Information Exchange Network provides a conceptual design for the Network. The Blueprint document can be accessed at: http://www.sso.org/ecos/eie/COMPLETE_BLUEPRINT_JUNE_01_FINAL.pdf.

Board – The Network Steering Board.¹

CDX – EPA's Central Data Exchange is a centralized electronic report receiving system that will serve as EPA's enterprise-wide portal to the National Environment Information Exchange Network.

COM – The Component Object Model is Microsoft's framework for developing and supporting program component objects. COM provides the underlying services of interface negotiation, life cycle management, licensing, and event services.

Java Test Application – The Java application used for the Beta Phase to send service requests to Beta Nodes.

DMZ – The (Network) Demilitarized Zone is a peripheral network used to interact with an external network (Internet) that protects a production network by means of a firewall, and router software and hardware.

DTD – A Document Type Definition is an optional list of rules (markup declarations) to which a document or class of documents must conform, including information about what markup is valid in the document and the document's structure.

ebXML – Electronic Business XML initiative is a modular suite of specifications that enables enterprises of any size and in any geographic location to conduct business over the Internet.

EDSC – Environmental Data Standards Council develops environmental data standards to promote the exchange of information among States, Native American Tribes, and EPA.

EPA – U.S. Environmental Protection Agency.

Extensible – A language or object that can be extended and adapted to meet many different needs.

Flow or Network Flow – The routine use of the Network to satisfy a business need for exchanging specific information (and replace a legacy flow if one existed) between two or more Network Partners.

FRS – EPA's Facility Registry System (<http://www.epa.gov/enviro/html/facility.html>)

HTTP – HyperText Transfer Protocol is a protocol used to request and transmit files, especially webpages and webpage components, over the Internet or other computer network.

¹ See the Network Implementation Plan for a detailed description of the roles and responsibilities of this group.

HTTPS – HTTP that provides for the secure exchange of information by using SSL as a sublayer.

IMWG – State/EPA Information Management Workgroup¹ is Composed of senior leaders from EPA and state environmental agencies, the IMWG has initiated an approach to address joint information management in the form of a National Environmental Information Exchange Network (Network). (<http://www.epa.gov/oei/imwg/>)

INSG – Interim Network Steering Group (INSG).¹

Interoperability – The ability of software and hardware to communicate between multiple machines from multiple vendors.

JDBC – Java Database Connectivity is a connectivity tool that lets developers using the Java programming language gain access to a wide range of databases and other data sources, either directly or through middleware.

Middleware – A broad array of tools and data that help applications use networked resources and services.

MIME – Multipurpose Internet Mail Extensions is an extension of the original Internet e-mail protocol (Simple Mail Transport Protocol (SMTP)) so that the Internet client and server can recognize and handle data other than ASCII text.

Network or The Network – The National Environment Information Exchange Network.

Network Exchange Protocol – The set of rules that governs the generation and use of valid service requests and responses. Since the Network is based on pre-existing standards, the Network Exchange Protocol will provide addition rules that govern how those standards (namely XML, XML Schema, SOAP and WSDL) are implemented on the Network. These additional rules are needed because these standards, given their extensibility, can be implemented in many operational but mutually incompatible ways. Network Exchange Protocols will be used by implementers to take their data content standards (defined in Templates) and embed them in valid service requests and responses. They can also be used to confirm or establish the validity of one's own or a Partners service requests and responses.

Network Implementation Plan – Describes the plan for the implementation of the Network. The Network Implementation Plan can be found at
http://www.sso.org/ecos/eie/Iplan_Feb2002.PDF.

NIACS Code – North American Industry Classification System is a system of numerical codes designed to create uniform descriptions of business establishments. This system is in the process of replacing SIC Codes (see definition below).

NIST – National Institute of Standards and Technology.

Node or Network Node – A set of tools to exchange information on the Network. A node uses the Internet, a set of standard protocols, and appropriate security measures to issue and respond to authorized requests for specific information. A Node is a simple environmental web service that initiates requests for information, processes authorized queries, and sends the requested information in a standard format (XML). A Node also validates this information against a pre-defined Schema or Data Exchange Template.

Node Functional Specification – The detailed description of a Node's expected behavior. This description will include the functions the Node will perform, how those functions are invoked and the output expected. The specification may also include a limited number of internal Node behaviors (e.g. logging and security). Since most Node functions involve data exchange, the Node Functional Specification will rely heavily on the Network Exchange Protocol to define the types of valid messages a Node should expect and be able to produce. The Node Functional Specification may be supported by a standard "test suite" of service requests and responses that Nodes must be able to process.

Node Pilot Project - The Alpha Phase – A pilot project conducted in the spring and summer of 2001. The project developed "proof of concept" Network nodes using XML technologies, demonstrating that these technologies could be used to build nodes as described in the Blueprint. Four states (Delaware, New Hampshire, Nebraska, and Utah) initiated and executed the pilot.

Node Pilot Project - The Beta Phase – Currently in progress, it continues the work begun during the Alpha Phase and establishes end-to-end flows with EPA, uses a revised comprehensive DET for facility data, and will inform draft specifications for node implementation.

ODBC – Open Database Connectivity is a standard database access method developed by Microsoft Corporation that is interoperable with most database management systems.

Partners – Network Partners are participants in the Network. Network Partners can be States, U.S. Territories, Tribes, and EPA or other organizations that share data over the Network.

POST – HTTP method that creates new object links to specified objects.

Registry or Network Registry – A web site that serves as the official record and location for the Network's Templates, and TPAs. Trading Partners will depend on the registry to access other Nodes' information and exchange parameters.

RPC – Remote Procedure Call is a type of protocol that allows a program on one computer to execute a program on a server computer.

Schema – A database-inspired method for specifying constraints on XML documents using an XML-based language. Schemas address deficiencies in DTDs, such as the inability to put constraints on the kinds of data that can occur in a particular field (for example, all numeric). Schemas are hierarchical and can create an unambiguous specification. They can also determine the scope over which a comment is meant to apply.

Server Certificates – Digital certificates for the server used by browsers to authenticate websites.

SIC Codes – Standard Industrial Classification Codes are numerical codes designed to create uniform descriptions of business establishments.

SOAP – Simple Object Access Protocol is an XML/HTTP-based protocol for accessing services, objects and servers in a platform-independent manner.

SQL – Structured Query Language is the standard language for relational database management systems.

SSL – Secure Sockets Layer created by Netscape Communications, also known as secure server, provides for the encrypted transmission of data across the Internet. Users on both sides are able to authenticate data and ensure message integrity.

Stored Procedures – Sets of SQL statements with assigned names that are stored in databases in compiled form so that they can be shared by a number of programs.

Templates – Data Exchange Templates are empty but defined templates for data presentation and exchange. They identify what types of information are required for a particular document (i.e., name, address, etc.) as established in predefined standards or agreements. Specifically, templates are typically either DTDs or Schemas.

Topology – The specific physical arrangement of the elements of a given network. These elements include physical interconnections, distances between nodes, transmission rates, and/or signal types.

TPA – A Trading Partner Agreement defines the partners, information, stewardship, security, and other items essential for the exchange of information between two trading partners on the Network.

TRG – State/EPA Technical Resource Group.¹

W3C – World Wide Web Consortium is an industry consortium that promotes standards for the evolution of the Web and interoperability between WWW products by producing specifications and reference software.

Web Services – A web service is software that exposes very simple functionality of business applications through the Internet. Web services communicate with other web services via standards-based technologies that can be accessed by trading partners independent of hardware, operating system, or programming environment.

WSDL – Web Services Description Language defines the beginning and end point of a service that allows other computers to access and invoke its function. WSDL provides other computers the structure to determine what a web service does, what a web service needs to work, and how to invoke it.

XML – eXtensible Markup Language is a markup language defined by the W3C that provides a strict set of standards for document syntax while allowing developers, organizations, and communities to define their own vocabularies.

Appendix 2: Issues to be Addressed by Other Parties (Recommendations to the Board)

Beta Phase participants developed the following set of recommendations for consideration by the Board. These recommendations are based on the findings and lessons learned during the Beta Phase. The lessons relate to the Beta Phase's implementation and use of Network components, such as Schemas, the Registry, and Nodes. Note that many of these recommendations are similar to milestones within the *Network Implementation Plan*, since the work of both the Beta Phase and Network Implementation Plan efforts and activities paralleled each other.

Continue Development of Network Schema (Template) Guidance:

The Beta Phase was the first Network effort that used and tested the facility Schemas. As a result, many generic issues regarding Schemas and tag names were uncovered during this project. These included:

The Handling and Notation of Missing or Unavailable Data Elements

As will likely be the case for most exchanges, not all Beta Phase participants had all of the data elements contained in the facility Schemas. In addition, the XML files for States that did not have data for a data element (empty tags) did not validate against the designated Schema for a particular service response. This issue also extended to data elements that were partially filled with data. Furthermore, the Beta Phase used “nillable” values to circumvent the empty tags issue. This Schema method replaces empty tags with a nil value, so that the service response can validate against a Schema. In the case of the Beta Phase, this method partially worked. This method appears to only work if an entire data element’s data is blank (i.e., if a State agency had a data element partially filled with data, the service response would not validate against its designated Schema). Overall, there are many factors, including numerous permutations of unavailable data, which affect the validation and use of Schemas.

Relationships

Even though most Beta States’ existing information systems are modeled similar to the FITSII data model and, in turn, the facility data standard, some needed to adjust mapping to reflect relationships within the facility Schema, specifically to represent the SIC/NAICS code relationships with Environmental Interest.

Character Constraints

There is market that provides specific tools that have character constraints built in, and therefore, these tools should be considered while naming tags. For instance, one Beta Phase participant’s database could only contain data elements that are 30 characters or less. Some elements in the Facility Schema were longer, which required the participant to work harder to troubleshoot this specific issue.

Beta Phase participants recommend that the Board develop Schemas and tag names that are created and used consistently across the board. This requires further investigation of Schema usage, validation, edits, and enumeration lists. For more information please refer to Table 14 of the *Network Implementation Plan* for the following milestone section: “Developing Data Exchange Templates.”

Develop the Registry and Guidance on its Use as Soon as Practicable

The Beta Phase used the current version of the Registry to retrieve the input and output Schemas used to validate service requests and responses. Although the Beta Phase use of the Registry was successful, participants anticipate that issues with the Registry will occur as Templates/Schemas become more complex and more are developed.

Beta Phase participants recommend that the Board further develop the Registry to support complex Template/Schema components. As the Network develops and more Partners exchange information, it is imperative that the Registry be able to support the assembly of Schema from registered components. For more information, please refer to Table 15 of the *Network Implementation Plan* for the following milestone section: “Operating and Supporting the Network Registry/Repository.”

Create a Core Reference Model to Guide Future Template Development

As suggested above, it is anticipated that Schema development and complexity will continue to increase. Partners are already noticing redundant Schema development efforts. Beta Phase participants recommend that the Board create a core reference model to manage and target development of future Templates. For more information, please refer to Table 13 of the *Network Implementation Plan* for the following milestone section: “Implementing Data Standards.”

Assist States in Procuring Technologies

Beta Phase participants recommend that the Board provide support to Partners in identifying and sharing information about technologies and vendors. For more information, please refer to Table 19 of the *Network Implementation Plan* for the following milestone section: “Monitoring and Developing Recommendations on Network Technologies.”

Create a Network Website for Support of Teams and Distribution of Reference Materials

Beta Phase participants recommend that the Board create a Network website to act as a clearinghouse for all information needed to participate in the Network. This website will provide a way for Partners to stay connected to each other and the Network. For more information, please refer to Table 5 of the *Network Implementation Plan* for the following milestone section: “Guiding Network Implementation and Participation.”

Develop Network Exchange Protocols

In the beginning of the Beta Phase, there were many decisions to be made about available technologies, specifically SOAP and WSDL. Most Beta Phase participants had little knowledge of these technologies in the beginning of this project. As a result, Beta Phase

participants made decisions regarding Node implementation at the beginning that caused problems later in the project.

Beta Phase participants recommend that the Board collaborate with the Beta Follow-on Project to develop a Network Exchange Protocol by defining which and how technologies, such as SOAP and WSDL, should be used for the Network. For more information, please refer to Table 17 of the *Network Implementation Plan* for the following milestone section: “Refining the Details of the End-to-end Information Exchange Process.”

Develop Node Functional Specifications

Vendors and agency staff involved in the Beta Phase all noted that the availability of more detailed functional specification for Nodes would have dramatically reduced the time needed to establish Nodes. Of course, laying the groundwork for such documentation was the primary purpose of the Beta Project itself.

Beta Phase participants recommend that the Board collaborate with the Beta Follow-on Project to commission the development of a document on Node Functional specification. For more information, please refer to Table 16 of the *Network Implementation Plan* for the following milestone section: “Establishing Network Nodes.”

Develop Security Standards

Despite moderate configuration and implementation challenges, the Beta Phase successfully tested exchanges using Network Security Levels 1 and 2 (i.e., unidirectional SSL). (Note that Security Level 3 testing is being explored.) As discussed in the “Beta Node Performance” section, the Beta Nodes appear to be able to handle the encryption load of level 2 without significant performance penalties. This suggests that Security Level 2 and presumably Security Level 3 can be used for routine Flows. The team identified issues associated with certificate management and installation, and the need for staff training for server configuration.

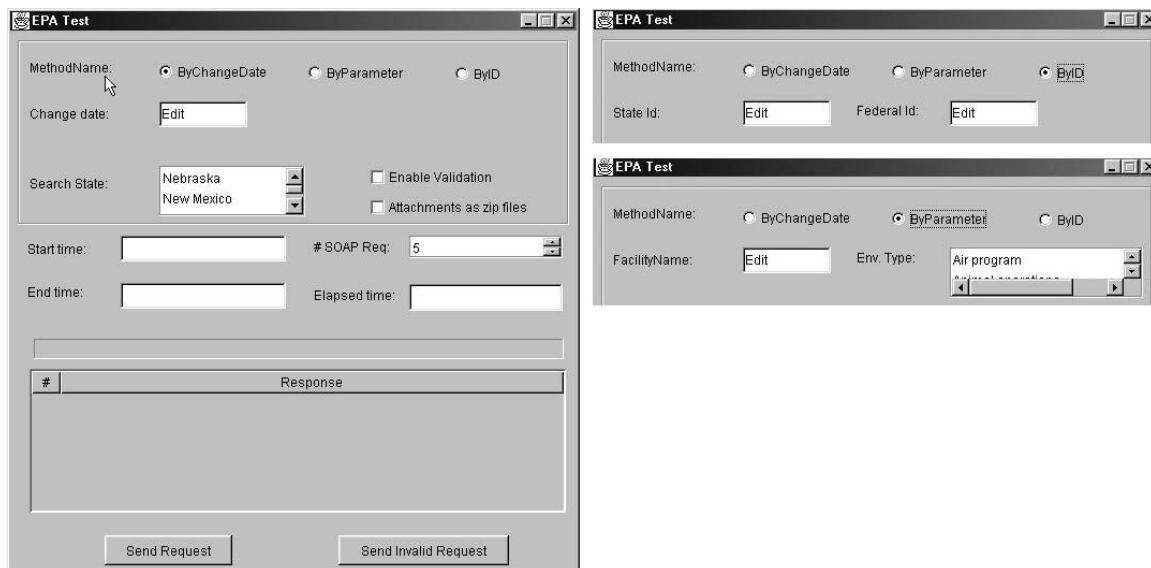
Beta Phase participants recommend that the Board develop security standards for Network Flows and incorporate use of these standards into any training it provides. This includes more research into the designated Security Levels (1-4) and security options (e.g., server certificates and Public Key Infrastructure) for Network exchanges. For more information, please refer to Table 12 of the *Network Implementation Plan* for the following milestone section: “Ensuring Network Security.”

Provide Targeted Node Training

Beta Phase participants recommend that the Board provide targeted training support to Network participants. Training should be balanced between providing generic XML training and specific training on the use of the Network Exchange Protocol and Node Functional Specification.

Appendix 3. Java Application

Beta Phase participants demonstrated Beta Node performance and functionality with a Java test application. Developed for the Beta Phase, the Java test application initiated the service requests, displayed the response results, and tested Node performance. The Java test application allowed users to select the query with the corresponding parameters and which Node(s) to query. Once the users selected the parameters for their queries and initiated the requests (by pressing the Send Request button), the Java test application took the XML service requests, wrapped them in SOAP, and sent the packages to the Nodes. The Java test application then received the response information and saved the files for the users. See the screen shot of the Java test application below.



The Java test application also allowed for Beta Node evaluation since it included an option to send serial SOAP requests, an option to send an error message, total time taken to service the request, and total time taken by the Node to service the request. Finally, a configuration file included with the Java test application allowed Beta Phase participants to customize their applications.

Appendix 4. Test Suite

This appendix provides the test suite results for each Beta Phase participant. As discussed in the *Network Node Pilot Project Beta Phase: Report on Project Results & Next Steps*, these tests provided a way to gauge the performance of each participant's Node. The first table provides a description of each test, the purpose for each test, and the input and output data requirements for each test. The following tables provide participants' results.

Network Node Pilot Project – Beta Phase Test Suite Description

#	Scenario Name	Tool	Input	Output	Description and Purpose
1	ChangeDate Small	Java Demo Application	A date provided by the states that will return 10-20 records.	10-20 records	Test the performance of a query that returns only 10-20 records. This will aid in assessing scalability
2	ChangeDate Large	Java Demo Application	A date provided by the states that will return 500.	500 records	Test the performance of a query that returns 500+ records. This will aid in assessing scalability
3	ByParameterFacilityName	Java Demo Application	Search for one facility by name. (Preferably one that has an EI of Haz. Waste.)	One record	Participants are responsible for finding one unique facility for testing this request. The facility should have the EI "HAZARDOUS WASTE PROGRAMS"
4	ByParameterEnvironmental Interest	Java Demo Application	Search by "HAZARDOUS WASTE PROGRAMS"	Records with "HAZARDOUS WASTE PROGRAMS"	
5	ByParameterBoth	Java Demo Application	Search by two parameters, EI and Facility Name	Records that match BOTH parameters	Test the performance of querying by two parameters (By Facility Name and/or EI Type). Use the same parameter used in tests 4 and 5
6	ByID#1	Java Demo Application	State/Federal ID	One record	Test how a node services this query
7	Serial ByID requests	Java Demo Application	A request that has ten SOAP envelopes with legitimate imbedded ByID requests.	10 responses	To test how a Node will respond to multiple simultaneous SOAP requests. Select "10" in # SOAP req. box in Java App.
8	InvalidInputTest	Java Demo Application	A valid SOAP envelope with a request that doesn't adhere to input schema.	Error Message	To test an invalid request for information to node. A simple post request from web page that has a valid SOAP envelope but an invalid request, i.e., GetFoo()

9 GetFacilityByIDZero Record	Java Demo Application	Search by Facility ID with substring "ZZZZZZ"	Message	Send a request to the node that returns Zero Records
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*Each state should perform a test that 'breaks (too much information requested)' the process. Please document how this was done, and information including the point where the system broke and any test iteration information.

These tests can be run on both Port 80 and Port 443.

Test Results: Utah

State: Utah
 Date: March 13, 2001
 Tester: Brent Pathakis
 Middleware: Biztalk
 Server Type: Compaq Proliant 1850 500mhz
 Connection Speed: 100mbits

Internet Connection Speed of Computer Running Java Test Application:

Test Scenario Name	Start Time	End Time	Elapsed Time:	Number of Records Returned	Parameter Used	Port Used	Notes (Error Messages if applicable)
ChangeDate Small	Mar 13, 09:03:20::31	Mar 13, 09:03:23 ::203	2812	12	7/25/01	80	
ChangeDate Large	Mar 13, 09:24:28::406	Mar 13, 09:27:19 ::953	46984	525	12/8/00	80	
ByParameterFacilityName	Mar 13, 09:30:15::828	Mar 13, 09:30:16 ::296	375	1	FRAMPTON, EI of hazardous waste programs	80	
ByParameterEnvironmentalInterest	Mar 13, 09:31:44::0	Mar 13, 09:31:55 ::703	10235	1109	EI Hazardous Waste Programs	80	
ByParameterBoth	Mar 13, 09:36:04::203	Mar 13, 09:36:04 ::640	328	1	FRAMPTON, EI of hazardous waste programs	80	
Serial ByID requests	Mar 13, 09:37:37::812	Mar 13, 09:37:38 ::312	422	1	facID 4900000029299, 10 regs	80	
InvalidInput Request	Mar 13, 09:39:23::359	Mar 13, 09:39:23 ::562	422	0	"send invalid request" button	80	
GetFacilityByIDZero Record	Mar 13, 09:41:16::375	Mar 13, 09:41:16 ::828	406	0	ZZZZZZ	80	

* Each state should perform a test that 'breaks (too much information requested)' the process. Please document how this was done, and information including the point where the system broke and any test iteration information.

Test Results: New Hampshire

State: New Hampshire
 Date: March 14, 2001
 Tester:
 Middleware: Biztalk
 Server Type:
 Connection Speed:
 Internet Connection Speed of Computer Running Java Test Application:

Test Scenario Name	Start Time	End Time	Elapsed Time:	Number of Records Returned	Parameter Used	Port Used	Notes (Error Messages if applicable)
ChangeDate Small	8:63::640	9:16::810	31343	17	1/29/02	80	
ChangeDate Large	16:47::910	19:35::550	21312	581	9/1/01	80	
ByParameterFacilityName	53:57::120	54:00::950	2579	1	Albany International Techniweave Inc	80	
ByParameterEnvironmentalInterest	04::570	47::230	37344	1184	Hazardous Waste Programs	80 443	
ByParameterBoth	48:51::260	49:16::360	19791	800	A% and Hazwaste	80	
ByID#1	07::350	1.01388889	3359	1	54399	80	
Serial ByID requests	45::0	48::730	3312		54399	80	
InvalidInput Request						80	Test Failed: SOAP exception.
GetFacilityByIDZero Record	24::990	25::650	594	0	ZZZZZZZ	80	

* Each state should perform a test that 'breaks (too much information requested)' the process. Please document how this was done, and information including the point where the system broke and any test iteration information.

Test Results: Delaware

State: Delaware
 Date: February 11, 2002
 Tester: Dennis Murphy
 Middleware: Biztalk
 Server Type: Dell

Connection Speed: T1

Internet Connection Speed of Computer Running Java Test Application: 100 mps

Test Scenario Name	Start Time	End Time	Elapsed Time:	Number of Records Returned	Parameter Used	Port Used	Notes (Error Messages if applicable)
ChangeDate Small	Feb 11, 07:56:41 ::61	Feb 11, 07:56:44: :165	2984	20	2/9/02	80	Total Time 2.5 seconds
	Feb 11, 07:53:52 ::759	Feb 11, 07:54:03: :625	2984	20	2/9/02	443	Total Time 10.9 seconds
ChangeDate Large	Feb 11, 08:07:50 ::944	Feb 11, 08:07:53: :638	2578	500	2/9/02	80	Total Time 2.7 seconds
	Feb 11, 08:09:43 ::746	Feb 11, 08:09:46: :621	2547	500	2/9/02	443	Total Time 2.9 seconds
ByParameterFacilityName	Feb 11, 08:20:10 ::47	Feb 11, 08:20:10: :137	63	1	Formosa	80	Total Time 0.1 seconds
	Feb 11, 08:18:10 ::665	Feb 11, 08:18:10: :906	62	1	Formosa	443	Total Time 0.3 seconds
ByParameterEnvironmentalInterest	Feb 11, 08:35:11 ::673	Feb 11, 08:35:24: :382	969	984	Hazardous Waste Programs	80	Total Time 12.7 seconds
	Feb 11, 08:36:43 ::746	Feb 11, 08:36:53: :189	969	984	Hazardous Waste Programs	443	Total Time 9.4 seconds
ByParameterBoth	Feb 11, 08:51:12 ::695	Feb 11, 08:51:12: :826	63	1	Formosa Hazardous Waste Programs	80	Total Time 0.1 seconds
	Feb 11, 08:49:33 ::42	Feb 11, 08:49:33: :312	62	1	Hazardous Waste Programs	443	Total Time 0.3 seconds
Serial ByID requests	Feb 12, 07:52:12 ::191	Feb 12, 07:52:14: :745	922	1	10000024	80	Total Time 2.5 seconds
	Feb 12, 07:54:47 ::945	Feb 12, 07:54:49: :167	937	1	10000024	443	Total Time 1.2 seconds
Serial ByID requests Issued 10 times	Feb 12, 07:57:29 ::868	Feb 12, 07:57:32: :382	922	1	10000024	80	Total Time 2.5 seconds
	Feb 12, 07:56:34 ::619	Feb 12, 07:56:37: :22	937	1	10000024	443	Total Time 2.4 seconds
InvalidInput Request						80	Error-No time returned
						443	Error-No time returned
Output Schema						80	

						443	
GetFacilityByIDZero Record	Feb 12, 08:10:58::191	Feb 12, 08:10:58::681	453	0	State ID=1	80	Total Time 0.5 seconds
	Feb 12, 08:09:57::33	Feb 12, 08:09:57::804	468	0	State ID=1	443	Total Time 0.7 seconds
Break App Test Chg Date that returns all records	Feb 12, 08:13:04::662	Feb 12, 08:27:41::453	13797	1746	1/1/99	80	Total Time 14 min 36.8 sec
	Feb 12, 11:36:43::57	Feb 12, 11:51:17::234	14172	1746	1/1/99	443	Total Time 14 min 34.2 sec
*Each state should perform a test that 'breaks (too much information requested)' the process. Please document how this was done, and information including the point where the system broke and any test iteration information.							

Test Results: Nebraska

State: Nebraska
 Date: January 15, 2002
 Tester: Dennis Burling
 Middleware: XAware
 Server Type: NT server running on a Gateway 2000 1000Mhz P4 system
 Connection Speed: 16Mb token ring
 Internet Connection Speed of Computer Running Java Test Application: 16Mb token ring
 Additional Test Environment Information: AS/400 production environment using DB2/400 as the database and ODBC

Test Scenario Name	Start Time	End Time	Elapsed Time:	Number of Records Returned	Parameter Used	Port Used	Notes (Error Messages if applicable)
ChangeDate Small	8:46:41: 250	8:47:02: 406	19094	875	1/8/02	80	No validation for XML data, result saved to file
ChangeDate Small	8:43:15: 531	8:43:28: 250	13204	252	1/14/02	80	No validation for XML data, result saved to file
ChangeDate Large	8:44:27: 171	8:45:56: 718	16500	4052	12/15/01	80	No validation for XML data, result saved to file
ChangeDate Large	8:51:27: 312	8:55:08: 171	18093	7883	11/15/01	80	No validation for XML data, result saved to file
ByParameterFacilityName	7:21:13: 671	7:21:17: 875	2860	93	AL%	80	No validation for XML data, result saved to file
ByParameterFacilityName	7:28:03: 234	7:28:04: 484	953	93	AL%	80	Valid XML data, result saved to file

ByParameterEnv ironmentalInterest	7:23:07: 234	7:23:25: 656	11969	2786	Hazardous Waste Programs	80	No validation for XML data, result saved to file
ByParameterEnv ironmentalInterest	7:26:58: 437	7:27:05: 718	3172	2786	Hazardous Waste Programs	80	Valid XML data, result saved to file
ByParameterBot h	7:24:21: 593	7:24:22: 140	500	3	AL% & Hazardous Waste Programs	80	No validation for XML data, result saved to file
ByParameterBot h	7:26:00: 812	7:26:02: 780	469	3	AL% & Hazardous Waste Programs	80	Valid XML data, result saved to file
BYID small facility	7:30:53: 531	7:31:05: 703	11297	1 facility, 6 records	101	80	No validation for XML data, result saved to file
BYID medium facility	7:32:45: 921	7:33:13: 328	27000	1 facility, 42 records	41166	80	No validation for XML data, result saved to file
BYID larger facility	7:35:41: 109	7:36:59: 671	78031	1 facility, 63 records	4129	80	No validation for XML data, result saved to file
Serial ByID requests	7:39:57: 953	7:40:43: 968	45485	1 facility 10 times, 6 records per facility for 60 records	101 for 10 times	80	No validation for XML data, result saved to file
InvalidInput Request	7:45:07: 281	7:45:08: 930		0	Application option	80	SOAP Fault- missing required element
GetFacilityByIDZ ero Record	7:46:22: 125	7:46:23: 406	1203	0	0	80	No validation
ChangeDateZero Record	7:09:40: 500	7:09:52: 859	12359	0	11/15/02	80	No validation
ChangeDate Large	7:32:07: 421	7:40:05: 562	44391	12261	11/1/01	80	No validation for XML data, result saved to file
ChangeDate Large					10/1/01		Invalid URL (application will not run)
ChangeDate Large					10/15/01		Invalid URL (application will not run)
ChangeDate Large	7:51:22: 468	7:59:01: 593	28922	13062	10/23/01	80	No validation for XML data, result saved to file

It would appear that somewhere around 13500 records, the job is too much for the cache to process everything. If our system maintenance is consistent, then it appears we could support an exchange requesting up to 3 months of changed information.

ByParameterFacilityName	8:01:41: 828	8:01:46: 515	3312	94	AL%	80	No validation for XML data, result saved to file
ByParameterFacilityName	8:03:17: 312	8:03:35: 460	12985	2440	A%	80	No validation for XML data, result saved to file
ByParameterFacilityName					%		Invalid URL (application will not run)
ByParameterFacilityName	8:05:20: 780	8:05:24: 859	3172	1580	N%	80	No validation for XML data, result saved to file
ByParameterFacilityName	8:08:12: 156	8:08:18: 296	3031	2534	B%	80	No validation for XML data, result saved to file

The only answer here is that between 3000 and 26000 is too much for the cache to process

Test Results: Florida

State: Florida
 Date: January 23, 2002
 Tester: Charles Li
 Middleware: Oracle 9iAS 1.0.2.2.0
 Server Type: Compaq Tru64
 Connection Speed: 30 - 40 Mbits/sec
 Internet Connection Speed of Computer Running Java Test Application: 30 - 40 Mbits/sec

** Please Note: We only completed schema validation for ByParameter. Also, we used the old schemas where there are underscores in the field names.

Test Scenario Name	Start Time	End Time	Elapsed Time:	Number of Records Returned	Parameter Used	Port Used	Notes (Error Messages if applicable)
ChangeDate Small	Did not complete for Beta Test					80, 443	We chose not to do this test, since it required zipping that we only learned about late
ChangeDate Large	Did not complete for Beta Test					80, 443	We chose not to do this test, since it required zipping that we only learned about late
ByParameterFacilityName	10:01:2 3::374	10:01:2 7::450	4007	1	facilityName=AL JOHNSON CONSTRUCTION CO; Env Type=Air Program		
ByParameterEnv ironmentallInterest	10:03:3 0::697	10:03:5 2::979	12518	2549	no facilityName; Env Type=Hazardous Waste Program		

Network Node Pilot Project Beta Phase – Report on Project Results and Next Steps Appendices

ByParameterBot h	10:06:3 4::441	10:06:3 5::342	794	16	facilityName =DIXIE; Env Type=Hazardous Waste Program	80	
ByID#1	09:36:0 9::26	09:36:3 5::44	25948	1	State id=1, no federal id	80	
Serial ByID requests	09:56:3 4::28	09:56:5 9::705	25610	1	State id=1, no federal id	80	
InvalidInput Request	10:09:3 0::384	10:09:3 0::875	419	0	State id=%, no federal id	80	<?xml version="1.0" ?><error>Java.sql.SQL Exception: ORA-00911: invalid character</error>. This was due sending an character '%' instead of a number, which was required.
Output Schema	Does not need to be performed.					80	
GetFacilityByIDZ ero Record	09:58:1 0::196	09:58:1 0::466	215	0	State id=99999, no federal id	80	
ByID	12:25:1 7::479	13:30:1 7::697	3982	0	no State id federal id=a		This will get all records for ByID
							The query ran for 1.5 hours. It came back saying "Error sending SOAP request. Please make sure receiving URL is valid. Please note that the ByID query has a 8 table join.

Appendix 5. Node Code

“Node code “ includes code for xbc files (a type of file used for mapping), stored procedures (used for mapping), and SOAP messaging. This appendix provides two examples of node code.

The first example is the set of xbc files used by Nebraska to map its existing information system(s) to its middleware for service request *By Change Date*. This file is divided into sections to map according to the Component facility Schema – facility site, environmental interest, alternative name, mailing address, SIC code, NAIC code individual, organization, and geographic coordinates. Each separate Schema is distinguished by its name, in bold text. These titles are *not* part of the code.

The second example is the stored procedures used by New Hampshire to map its existing information system(s) to Biztalk for service request *By ID*. The example is constructed to map according to the consolidated hierarchical facility Schema.

Example One: XBC Files for By Change Date

Facility Site

```
<SQL _BIZDRIVER="epa_test\epa_ne_1.xdr"
      _BIZCOMPTYPE="SQL">
<INPUT>
  <PARAM _NAME="whereClause"
         Datatype="string" />
</INPUT>
<FacilitySiteDetails>SELECT distinct facmstp.FACID, cnymstp.COUNTY, facmstp.FACNAM,
facmstp.OPTADR, facmstp.STREET, facmstp.LOCDSC, facmstp.CITY, facmstp.CNYFIP,
facmstp.STATE, facmstp.ZIPCOD, facmstp.ZIPPLS, facmstp.CDIST, facmstp.LDIST,
facmstp.CDATE, cnymstp.CNYFIP FROM S841V151.IISDTALIB.cnymstp cnymstp,
S841V151.IISDTALIB.facmstp facmstp, S841V151.IISDTALIB.fpxmstp fpxmstp
%%whereClause and fpxmstp.FACID = facmstp.FACID and facmstp.CNYFIP = cnymstp.CNYFIP
and fpxmstp.DSPSEQ = '00001'</FacilitySiteDetails>

<_ROW_TEMPLATE>
  <FacilitySiteDetails StateFacilityIdentifier="%%FACID"
                      StateFacilitySystemAcronymName="IIS">
    <FacilityRegistryIdentifier/>
    <FacilitySiteName>%%FACNAM</FacilitySiteName>
    <LocationAddressText>%%STREET</LocationAddressText>
    <SupplementalLocationText>%%LOCDSC</SupplementalLocationText>
    <LocalityName>%%CITY</LocalityName>
    <temp _VISIBLE="PRUNE">%%CNYFIP</temp>
      <CountyStateFIPSCode>31%%.../temp</CountyStateFIPSCode>
    <CountyName>%%COUNTY</CountyName>
    <StateUSPSCode>NE</StateUSPSCode>
    <StateName>%%STATE</StateName>
    <CountryName>USA</CountryName>
    <LocationZIPCode>%%ZIPCOD %%ZIPPLS</LocationZIPCode>
    <LocationDescriptionText/>
    <FacilitySiteTypeName/>
    <FederalFacilityIndicator/>
    <TribalLandIndicator/>
```

```

<TribalLandName/>
<CongressionalDistrictNumber>%CDIST</CongressionalDistrictNumber>
<LegislativeDistrictNumber>%LDIST</LegislativeDistrictNumber>
<HUCCode/>
<DataSourceName>IIS</DataSourceName>
<LastReportedDate>%CDATE</LastReportedDate>
</FacilitySiteDetails>
</_ROW_TEMPLATE>
</SQL>

```

Environmental Interest

```

<SQL _BIZDRIVER="epa_test\epa_ne_1.xdr"
      _BIZCOMPTYPE="SQL">
<INPUT>
  <PARAM _NAME="fixDate"
        Datatype="string" />
</INPUT>
<EnvironmentalInterestDetails>SELECT fpymstp.FACID, fpymstp.PRGACR,
fpymstp.PRGID1, fpymstp.PRGID2, fpymstp.ADATE, fpymstp.IDATE, fpymstp.CDATE FROM
S841V151.IISDTALIB.fpxmstp fpymstp WHERE fpymstp.CDATE >= '%fixDate' and
fpymstp.DSPSEQ = '00001' </EnvironmentalInterestDetails>

<_ROW_TEMPLATE>
  <EnvironmentalInterestDetails StateFacilitySystemAcronymName="IIS"
StateFacilityIdentifier="%%FACID">
    <InformationSystemAcronymName/>
    <InformationSystemIdentifier/>%PRGID1 %%PRGID2</InformationSystemIdentifier>
    <EnvironmentalInterestTypeText>%PRGACR</EnvironmentalInterestTypeText>
    <FederalStateInterestIndicator/>
    <Switchem _SWITCH="%%ADATE" _VISIBLE="NO">
      <EnvironmentalInterestStartDate _CASE="0001-01-
01"></EnvironmentalInterestStartDate>
      <EnvironmentalInterestStartDate
_DEFAULT="">%ADATE</EnvironmentalInterestStartDate>
    <Switchem>
      <InterestStartDateQualifierText/>
    <Switchem _SWITCH="%%IDATE" _VISIBLE="NO">
      <EnvironmentalInterestEndDate _CASE="0001-01-
01"></EnvironmentalInterestEndDate>
      <EnvironmentalInterestEndDate
_DEFAULT="">%IDATE</EnvironmentalInterestEndDate>
    <Switchem>
      <InterestEndDateQualifierText/>
      <DataSourceName/>IIS</DataSourceName>
      <LastReportedDate>%CDATE</LastReportedDate>
    </EnvironmentalInterestDetails>
  </_ROW_TEMPLATE>
</SQL>

```

Alternative Name

```

<SQL _BIZCOMPTYPE="SQL"
      _BIZDRIVER="epa_test\epa_ne_1.xdr">
<INPUT>
  <PARAM _NAME="fixDate"
        Datatype="string" />
</INPUT>
<AlternativeNameDetails>SELECT fnmstp.FACID, fnmstp.CDATE, fnmstp.FACNAM,
fnmstp.PRIFLG, fpymstp.PRGACR FROM S841V151.IISDTALIB.fnmstp fnmstp,
S841V151.IISDTALIB.fpxmstp fpymstp where fnmstp.FACID = fpymstp.FACID and

```

```

fpxmstp.PRGACR = 'DEQ' and fnmstp.PRIFLG = ' ' and fnmstp.CDATE >= '%%fixDate'
order by fnmstp.FACID</AlternativeNameDetails>

<_ROW_TEMPLATE>
    <AlternativeNameDetails StateFacilitySystemAcronymName="IIS"
        StateFacilityIdentifier="%%FACID">
        <AlternativeName>%%FACNAM</AlternativeName>
        <AlternativeNameTypeText>Historical Name</AlternativeNameTypeText>
        <DataSourceName>IIS</DataSourceName>
        <LastReportedDate>%%CDATE</LastReportedDate>
    </AlternativeNameDetails>
</_ROW_TEMPLATE>
</SQL>

```

Mailing Address

```

<SQL _BIZDRIVER="epa_test\epa_ne_1.xdr"
      _BIZCOMPTYPE="SQL">
<INPUT>
    <PARAM _NAME="fixDate"
          Datatype="string" />
</INPUT>
    <MailingAddressDeatils>SELECT fpxmstp.FACID, maxmstp.PRIFLG, mamstp.MAIL,
mamstp.SUITE, mamstp.CITY, mamstp.STATE, mamstp.ZIPCOD, mamstp.ZIPPLS, mamstp.CDATE
FROM S841V151.IISDTALIB.fpxmstp fpxmstp, S841V151.IISDTALIB.mamstp mamstp,
S841V151.IISDTALIB.maxmstp maxmstp WHERE mamstp.CDATE >= '%%fixDate' and
maxmstp.FACID = fpxmstp.FACID and maxmstp.MAILID = mamstp.MAILID and maxmstp.PRIFLG
= 'Y' and fpxmstp.PRGACR = 'DEQ' </MailingAddressDeatils>
<_ROW_TEMPLATE>
    <MailingAddressDetails StateFacilityIdentifier="%%FACID"
        StateFacilitySystemAcronymName="IIS">
        <AffiliationTypeText/>
        <MailingAddressText>%%MAIL</MailingAddressText>
        <SupplementalAddressText>%%SUITE</SupplementalAddressText>
        <MailingAddressCityName>%%CITY</MailingAddressCityName>
        <MailingAddressStateUSPSCode>NE</MailingAddressStateUSPSCode>
        <MailingAddressStateName>%%STATE</MailingAddressStateName>
        <MailingAddressCountryName>USA</MailingAddressCountryName>
        <MailingAddressZIPCode>%%ZIPCOD %%ZIPPLS</MailingAddressZIPCode>
        <DataSourceName>IIS</DataSourceName>
        <LastReportedDate>%%CDATE</LastReportedDate>
    </MailingAddressDetails>
</_ROW_TEMPLATE>
</SQL>

```

SIC Code

```

<SQL _BIZDRIVER="epa_test\epa_ne_1.xdr"
      _BIZCOMPTYPE="SQL">
<INPUT>
    <PARAM _NAME="fixDate"
          Datatype="string" />
</INPUT>
    <SICCodeDetails>SELECT sicmstp.FACID, sicmstp.SICCOD, sicmstp.SICPRI,
sicmstp.CDATE, sicmstp.PRGACR, fpxmstp.PRGID1, fpxmstp.PRGID2 FROM
S841V151.IISDTALIB.sicmstp sicmstp, S841V151.IISDTALIB.fpxmstp fpxmstp WHERE
sicmstp.CDATE >= '%%fixDate' and fpxmstp.PRGACR = sicmstp.PRGACR and fpxmstp.FACID
= sicmstp.FACID</SICCodeDetails>
<_ROW_TEMPLATE>
    <SICCodeDetails StateFacilityIdentifier="%%FACID"
        StateFacilitySystemAcronymName="IIS">

```

```

<InformationSystemAcronymName/>
<InformationSystemIdentifier>%%PRGID1 %%PRGID2</InformationSystemIdentifier>
<switchDEQ _SWITCH="%%PRGACR" _VISIBLE="NO">
<EnvironmentalInterestTypeText _CASE="DEQ"></EnvironmentalInterestTypeText>
<EnvironmentalInterestTypeText
_DEFAULT="">%%PRGACR</EnvironmentalInterestTypeText>
</switchDEQ>
<SICCode>%%SICCOD</SICCode>
<Switchem _SWITCH="%%SICPRI" _VISIBLE="NO">
<SICPrimaryIndicator _CASE="1">PRIMARY</SICPrimaryIndicator>
<SICPrimaryIndicator _DEFAULT="">SECONDARY</SICPrimaryIndicator>
</Switchem>
<DataSourceName>IIS</DataSourceName>
<LastReportedDate>%%CDATE</LastReportedDate>
</SICCodeDetails>
</_ROW_TEMPLATE>
</SQL>

```

NAICS Code

```

<SQL _BIZDRIVER="epa_test\epa_ne_1.xdr"
      _BIZCOMPTYPE="SQL">
<INPUT>
  <PARAM _NAME="fixDate"
         Datatype="string" />
</INPUT>
<NAICSCodeDetails>SELECT sicmstp.FACID, sicmstp.SICCOD, sicmstp.SICPRI,
sicmstp.CDATE FROM S841V151.IISDTALIB.sicmstp sicmstp WHERE sicmstp.CDATE >= '2006-
12-31'</NAICSCodeDetails>
<_ROW_TEMPLATE>
  <NAICSCodeDetails StateFacilityIdentifier="%%FACID"
                    StateFacilitySystemAcronymName="IIS">
    <InformationSystemAcronymName/>
    <InformationSystemIdentifier/>
    <EnvironmentalInterestTypeText/>
    <NAICSCode/>
    <NAICSPrimaryIndicator/>
    <DataSourceName/>
    <LastReportedDate>%%CDATE</LastReportedDate>
  </NAICSCodeDetails>
</_ROW_TEMPLATE>
</SQL>

```

Individual

```

<SQL _BIZDRIVER="epa_test\epa_ne_1.xdr"
      _BIZCOMPTYPE="SQL">
<INPUT>
  <PARAM _NAME="fixDate"
         Datatype="string" />
</INPUT>
<IndividualDetails>SELECT maxmstp.FACID, ctmstp.CTDSC, maxmstp.ADATE,
maxmstp.IDATE, mamstp.EMADR, mamstp.EMDOM, pnxmstp.PHONE, mamstp.ADRSEE,
mamstp.POSTTL, mamstp.MAIL, mamstp.OPTADDR, mamstp.CITY, mamstp.STATE, sfmstp.STNAM,
mamstp.ZIPCOD, mamstp.ZIPPLS, maxmstp.PRGACR, maxmstp.CDATE FROM
S841V151.IISDTALIB.maxmstp maxmstp, S841V151.IISDTALIB.ctmstp ctmstp,
S841V151.IISDTALIB.mamstp mamstp, S841V151.IISDTALIB.pnxmstp pnxmstp,
S841V151.IISDTALIB.sfmstp sfmstp where maxmstp.PRIFLG = 'Y' and pnxmstp.PRIFLG =
'Y' and maxmstp.CTCOD = ctmstp.CTCOD and maxmstp.MAILID = mamstp.MAILID and
mamstp.STATE = sfmstp.STATE and pnxmstp.FACID = maxmstp.FACID and maxmstp.FACID in
(select fpxmstp.FACID from S841V151.IISDTALIB.fpxmstp fpxmstp where fpxmstp.DSPSEQ
= '00001') and maxmstp.CDATE >= '%fixDate' </IndividualDetails>

```

```

<_ROW_TEMPLATE>
    <IndividualDetails StateFacilitySystemAcronymName="IIS"
        StateFacilityIdentifier="%%FACID">
        <InformationSystemAcronymName/>
        <InformationSystemIdentifier/>
    <switchDEQ _SWITCH="%%PRGACR" _VISIBLE="NO">
        <EnvironmentalInterestTypeText _CASE="DEQ"></EnvironmentalInterestTypeText>
        <EnvironmentalInterestTypeText
            _DEFAULT="">%%PRGACR</EnvironmentalInterestTypeText>
    </switchDEQ>
    <AffiliationTypeText>%%CTDSC</AffiliationTypeText>
    <Switchem _SWITCH="%%ADATE" _VISIBLE="NO">
        <AffiliationStartDate _CASE="0001-01-01"></AffiliationStartDate>
        <AffiliationStartDate _DEFAULT="">%%ADATE</AffiliationStartDate>
    </Switchem>
    <Switchem _SWITCH="%%IDATE" _VISIBLE="NO">
        <AffiliationEndDate _CASE="0001-01-01"></AffiliationEndDate>
        <AffiliationEndDate _DEFAULT="">%%IDATE</AffiliationEndDate>
    </Switchem>
    <temp _VISIBLE="PRUNE">%%EMADR</temp>
    <Switchem _SWITCH="%%..../temp" _VISIBLE="NO">
        <EmailAddressText _CASE=" "></EmailAddressText>
        <EmailAddressText
            _DEFAULT="">%%EMADR+@+%%EMDOM</EmailAddressText>
    </Switchem>
    <TelephoneNumber>%%PHONE</TelephoneNumber>
    <FaxNumber/>
    <AlternateTelephoneNumber/>
    <IndividualFullName>%%ADRSEE</IndividualFullName>
    <IndividualTitleText>%%POSTTL</IndividualTitleText>
    <MailingAddressText>%%MAIL</MailingAddressText>
    <SupplementalAddressText>%%OPTADR</SupplementalAddressText>
    <MailingAddressCityName>%%CITY</MailingAddressCityName>
    <MailingAddressStateUSPSCode>%%STATE</MailingAddressStateUSPSCode>
    <MailingAddressStateName>%%STNAM</MailingAddressStateName>
    <MailingAddressCountryName>USA</MailingAddressCountryName>
    <MailingAddressZIPCode>%%ZIPCOD %%ZIPPLS</MailingAddressZIPCode>
    <DataSourceName>IIS</DataSourceName>
    <LastReportedDate>%%CDATE</LastReportedDate>
</IndividualDetails>
</_ROW_TEMPLATE>
</SQL>

```

Organization

```

<SQL _BIZDRIVER="epa_test\epa_ne_1.xdr"
    _BIZCOMPTYPE="SQL">
    <INPUT>
        <PARAM _NAME="fixDate"
            Datatype="string" />
    </INPUT>
    <OrganizationDetails>SELECT rpxmstp.FACID, rptmstp.RPDSC, rpxmstp.ADATE,
rpxmstp.IDATE, rpmstp.RPNAME, entmstp.FOEDSC, rpmstp.PRNTCO, rpmstp.MAIL,
rpmstp.OPTADR, rpmstp.CITY, rpmstp.STATE, sfmstp.STNAM, rpmstp.ZIPCOD,
rpmstp.ZIPPLS, rpmstp.CDATE from S841V151.IISDTALIB.rpxmstp rpxmstp,
S841V151.IISDTALIB.rptmstp rptmstp, S841V151.IISDTALIB.rpmstp rpmstp,
S841V151.IISDTALIB.entmstp entmstp, S841V151.IISDTALIB.sfmstp sfmstp where
rpxmstp.PRIFLG = 'Y' and rpxmstp.RPCOD = rptmstp.RPCOD and rpxmstp.RPID =
rpmstp.RPID and rpmstp.FOECOD = entmstp.FOECOD and rpmstp.STATE = sfmstp.STATE and
rpmstp.CDATE = '%%fixDate' and (rpxmstp.FACID in (select fp xmstp.FACID from
S841V151.IISDTALIB.fpxmstp fpxmstp where fpxmstp.DSPSEQ =
'00001'))</OrganizationDetails>

```

```

<_ROW_TEMPLATE>
<OrganizationDetails StateFacilityIdentifier="%%FACID"
    StateFacilitySystemAcronymName="IIS">
    <InformationSystemAcronymName/>
    <InformationSystemIdentifier/>
    <EnvironmentalInterestTypeText/>
    <AffiliationTypeText>%%RPDSC</AffiliationTypeText>
    <Switchem _SWITCH="%%ADATE" _VISIBLE="NO">
        <AffiliationStartDate _CASE="0001-01-01"></AffiliationStartDate>
        <AffiliationStartDate _DEFAULT="">%%ADATE</AffiliationStartDate>
    </Switchem>
    <Switchem _SWITCH="%%IDATE" _VISIBLE="NO">
        <AffiliationEndDate _CASE="0001-01-01"></AffiliationEndDate>
        <AffiliationEndDate _DEFAULT="">%%IDATE</AffiliationEndDate>
    </Switchem>
    <EmailAddressText/>
    <TelephoneNumber/>
    <FaxNumber/>
    <AlternateTelephoneNumber/>
    <OrganizationFormalName>%%RPNAME</OrganizationFormalName>
    <OrganizationDUNSNumber/>
    <OrganizationTypeText>%%FOEDSC</OrganizationTypeText>
    <EmployerIdentifier/>
    <StateBusinessIdentifier/>
    <UltimateParentName>%%PRNTCO</UltimateParentName>
    <UltimateParentDUNSNumber/>
    <MailingAddressText>%%MAIL</MailingAddressText>
    <SupplementalAddressText>%%OPTADR</SupplementalAddressText>
    <MailingAddressCityName>%%CITY</MailingAddressCityName>
    <MailingAddressStateUSPSCode>%%STATE</MailingAddressStateUSPSCode>
    <MailingAddressStateName>%%STNAM</MailingAddressStateName>
    <MailingAddressCountryName>USA</MailingAddressCountryName>
    <MailingAddressZIPCode>%%ZIPCOD %%ZIPPLS</MailingAddressZIPCode>
    <DataSourceName>IIS</DataSourceName>
    <LastReportedDate>%%CDATE</LastReportedDate>
</OrganizationDetails>
</_ROW_TEMPLATE>
</SQL>

```

Geographic Coordinates

```

<SQL _BIZCOMPTYPE="SQL"
    _BIZDRIVER="epa_test\epa_ne_1.xdr">
<INPUT>
    <PARAM _NAME="fixDate"
        Datatype="string" />
    </INPUT>
    <GeographicCoordinateDetails>SELECT 'NAD', crdmstp.FACID, crdmstp.LAT, -
1*crdmstp.LON as LONV, crdmstp.RDATUM, crdmstp.LLDESC, crdmstp.LLSRC,
crdmstp.CDATE, crdmstp.USERID FROM S841V151.IISDTALIB.crdmstp crdmstp WHERE
crdmstp.CDATE >= '%%fixDate' and crdmstp.CRDPRI = 1 and crdmstp.FACID IN (SELECT
fpxmstp.FACID from S841V151.IISDTALIB.fpxmstp fpxmstp WHERE (fpxmstp.DSPSEQ =
'00001'))</GeographicCoordinateDetails>
<_ROW_TEMPLATE>
    <GeographicCoordinateDetails StateFacilityIdentifier="%%FACID"
        StateFacilitySystemAcronymName="IIS">
        <LatitudeMeasure>%%LAT</LatitudeMeasure>
        <LongitudeMeasure>%%LONV</LongitudeMeasure>
        <HorizontalAccuracyMeasure/>
        <Switchem _SWITCH="%%LLSRC" _VISIBLE="NO">
            <HorizontalCollectionMethodText _CASE="ADDMAT">ADDRESS MATCHING-
HOUSE

```

```

NUMBER</HorizontalCollectionMethodText>
    <HorizontalCollectionMethodText _CASE="GPS-DIF">GPS CODE (PSEUDO
RANGE) DIFFERENTIAL
</HorizontalCollectionMethodText>
    <HorizontalCollectionMethodText
_CASE="DIG-100K">INTERPOLATION-MAP</HorizontalCollectionMethodText>
    <HorizontalCollectionMethodText
_DEFAULT="">%%LLSRC</HorizontalCollectionMethodText>
    </Switchem>
    <temp _VISIBLE="PRUNE">%%RDATUM</temp>
        <Switchem1 _SWITCH="%%.../temp" _VISIBLE="NO">
            <HorizontalReferenceDatumName
_CASE=""></HorizontalReferenceDatumName>
            <HorizontalReferenceDatumName
_DEFAULT="">%1+%%RDATUM</HorizontalReferenceDatumName>
            </Switchem1>
        <SourceMapScaleNumber/>
        <ReferencePointText>%%LLDESC</ReferencePointText>
        <DataCollectionDate>%%CDATE</DataCollectionDate>
        <GeometricTypeName>POINT</GeometricTypeName>
        <LocationCommentsText/>
        <VerticalCollectionMethodText/>
        <VerticalMeasure/>
        <VerticalAccuracyMeasure/>
        <VerticalReferenceDatumName/>
        <DataSourceName/>
        <CoordinateDataSourceName>%%USERID</CoordinateDataSourceName>
        <SubEntityIdentifier/>
        <SubEntityTypeNames/>
    </GeographicCoordinateDetails>
</_ROW_TEMPLATE>
</SQL>

```

Example Two: Stored Procedures of By ID

```

CREATE OR REPLACE PACKAGE GETFACILITYBYID
as
type byid is ref cursor;
procedure getfacilitybyid1(v_site_id in char, v_fed_fac_id in char, result1 out
byid);
procedure getfacilitybyid2(v_site_id in char, v_fed_fac_id in char, result2 out
byid);
procedure getfacilitybyid3(v_site_id in char, v_fed_fac_id in char, result3 out
byid);
procedure getfacilitybyid4(v_site_id in char, v_fed_fac_id in char, result4 out
byid);
procedure getfacilitybyid5(v_site_id in char, v_fed_fac_id in char, result5 out
byid);
procedure getfacilitybyid6(v_site_id in char, v_fed_fac_id in char, result6 out
byid);
procedure getfacilitybyid7(v_site_id in char, v_fed_fac_id in char, result7 out
byid);
procedure getfacilitybyid8(v_site_id in char, v_fed_fac_id in char, result8 out
byid);
procedure getfacilitybyid9(v_site_id in char, v_fed_fac_id in char, result9 out
byid);
end;
/
CREATE OR REPLACE PACKAGE BODY GETFACILITYBYID
as
procedure getfacilitybyid1(v_site_id in char, v_fed_fac_id in char, result1 out
byid)
as

```

```

begin
open result1 for
SELECT
'blank' "stateFacilitySystemAcronymName",
DES_MASTER_ID"stateFacilityIdentifier",
'blank' "FacilityRegistryIdentifier",
DES_MASTER_NAME"FacilitySiteName",
DES_MASTER_ADDRESS_1"LocationAddressText",
DES_MASTER_ADDRESS_2"SupplementalLocationText",
DES_MASTER_TOWN"LocalityName",
'blank' "CountyStateFIPSCode",
'blank' "CountyName",
'NH' "StateUSPSCode",
'NH' "StateName",
'USA' "CountryName",
'999' "LocationZIPCode",
'blank' "LocationDescriptionText",
'blank' "FacilitySiteTypeName",
'blank' "FederalFacilityIndicator",
'N' "TribalLandIndicator",
'N' "TribalLandName",
'blank' "CongressionalDistrictNumber",
'blank' "LegislativeDistrictNumber",
'blank' "HUCCode",
'blank' "DataSourceName",
TO_CHAR(DES_MASTER_MOD_DATE, 'YYYY-MM-DD') "LastReportedDate"
FROM DES_MASTER
WHERE DES_MASTER_ID = v_site_id;

end;

/* ***** Number 2 *****/
procedure getfacilitybyid2(v_site_id in char, v_fed_fac_id in char, result2 out
byid)
as
begin
open result2 for
SELECT
'blank' "stateFacilitySystemAcronymName",
DES_MASTER_ID"stateFacilityIdentifier",
'blank' "InformationSystemAcronymName",
'blank' "InformationSystemIdentifier",
'blank' "EnvironmentalInterestTypeText",
'S' "FederalStateInterestIndicator",
'blank' "EnvironmentalInterestStartDate",
'blank' "InterestStartDateQualifierText",
'blank' "EnvironmentalInterestEndDate",
'blank' "InterestEndDateQualifierText",
'blank' "DataSourceName",
TO_CHAR(DES_MASTER_MOD_DATE, 'YYYY-MM-DD') "LastReportedDate"
FROM DES_MASTER
WHERE DES_MASTER_ID = v_site_id;
end;

/* ***** Number 3 *****/
procedure getfacilitybyid3(v_site_id in char, v_fed_fac_id in char, result3 out
byid)
as
begin
open result3 for
SELECT
'blank' "stateFacilitySystemAcronymName",
DES_MASTER_ID"stateFacilityIdentifier",

```

```

'blank' "InformationSystemAcronymName",
'blank' "InformationSystemIdentifier",
'blank' "EnvironmentalInterestTypeText",
sic_code "SICCode",
decode(sic_code,NULL,'blank','PRIMARY') "SICPrimaryIndicator",
'blank' "DataSourceName",
TO_CHAR(DES_MASTER_MOD_DATE,'YYYY-MM-DD') "LastReportedDate"
    FROM DES_MASTER, onestop_sic_naics
    WHERE DES_MASTER_ID = v_site_id
    and DES_MASTER_ID = onestop_sic_naics.master_id(+);
end;
/* ***** Number 4 *****/
procedure getfacilitybyid4(v_site_id in char, v_fed_fac_id in char, result4 out
byid)
as
begin
open result4 for
SELECT
'blank' "stateFacilitySystemAcronymName",
DES_MASTER_ID"stateFacilityIdentifier",
'blank' "InformationSystemAcronymName",
'blank' "InformationSystemIdentifier",
'blank' "EnvironmentalInterestTypeText",
naics_code "NAICSCode",
decode(naics_code,NULL,'blank','PRIMARY') "NAICSPPrimaryIndicator",
'blank' "DataSourceName",
TO_CHAR(DES_MASTER_MOD_DATE,'YYYY-MM-DD') "LastReportedDate"
    FROM DES_MASTER, onestop_sic_naics
    WHERE DES_MASTER_ID = v_site_id
    and DES_MASTER_ID = onestop_sic_naics.master_id(+);
end;
/* ***** Number 5 *****/
procedure getfacilitybyid5(v_site_id in char, v_fed_fac_id in char, result5 out
byid)
as
begin
open result5 for
SELECT
'blank' "stateFacilitySystemAcronymName",
DES_MASTER_ID"stateFacilityIdentifier",
'blank' "InformationSystemAcronymName",
'blank' "InformationSystemIdentifier",
'blank' "EnvironmentalInterestTypeText",
'blank' "AffiliationTypeText",
'blank' "AffiliationStartDate",
'blank' "AffiliationEndDate",
'blank' "EmailAddressText",
'blank' "TelephoneNumber",
'blank' "FaxNumber",
'blank' "AlternateTelephoneNumber",
'blank' "IndividualFullName",
'blank' "IndividualTitleText",
DES_MASTER_ADDRESS_1"MailingAddressText",
DES_MASTER_ADDRESS_2"SupplementalAddressText",
DES_MASTER_TOWN"MailingAddressCityName",
'NH' "MailingAddressStateUSPSCode",
'NEW HAMPSHIRE' "MailingAddressStateName",
'UNITED STATES' "MailingAddressCountryName",
decode(zipcode,NULL,'blank',zipcode)"MailingAddressZIPCode",
'blank' "DataSourceName",
TO_CHAR(DES_MASTER_MOD_DATE,'YYYY-MM-DD') "LastReportedDate"
    FROM DES_MASTER, onestop_zipcode
    WHERE DES_MASTER_ID = v_site_id

```

```

        and DES_MASTER_TOWN = onestop_zipcode.town(+);
end;
/* ***** Number 6 *****/
procedure getfacilitybyid6(v_site_id in char, v_fed_fac_id in char, result6 out
byid)
as
begin
open result6 for
SELECT
'blank' "stateFacilitySystemAcronymName",
DES_MASTER_ID"stateFacilityIdentifier",
'blank' "AffiliationTypeText",
DES_MASTER_ADDRESS_1"MailingAddressText",
DES_MASTER_ADDRESS_2"SupplementalAddressText",
DES_MASTER_TOWN"MailingAddressCityName",
'NH' "MailingAddressStateUSPSCode",
'NEW HAMPSHIRE' "MailingAddressStateName",
'UNITED STATES' "MailingAddressCountryName",
decode(zipcode,NULL,'blank',zipcode)"MailingAddressZIPCode",
'blank' "DataSourceName",
TO_CHAR(DES_MASTER_MOD_DATE,'YYYY-MM-DD')"LastReportedDate"
        FROM DES_MASTER, onestop_zipcode
        WHERE DES_MASTER_ID = v_site_id
        and DES_MASTER_TOWN = onestop_zipcode.town(+);
end;

/* ***** Number 7 *****/
procedure getfacilitybyid7(v_site_id in char, v_fed_fac_id in char, result7 out
byid)
as
begin
open result7 for
SELECT
'blank' "stateFacilitySystemAcronymName",
DES_MASTER_ID"stateFacilityIdentifier",
'blank' "AlternativeName",
'blank' "AlternativeNameTypeText",
'blank' "DataSourceName",
TO_CHAR(DES_MASTER_MOD_DATE,'YYYY-MM-DD')"LastReportedDate"
        FROM DES_MASTER
        WHERE DES_MASTER_ID = v_site_id;
end;
/* ***** Number 8 *****/
procedure getfacilitybyid8(v_site_id in char, v_fed_fac_id in char, result8 out
byid)
as
begin
open result8 for
SELECT
'blank' "stateFacilitySystemAcronymName",
DES_MASTER_ID"stateFacilityIdentifier",
decode(latitude_dec,NULL,'',ltrim(to_char(latitude_dec,'99.999999')))"LatitudeMeasure",
decode(longitude_dec,NULL,'',rtrim(to_char(longitude_dec,'99.999999MI')))"Longitude
Measure",
' ' "HorizontalAccuracyMeasure",
'blank' "HorizontalCollectionMethodText",
'blank' "HorizontalReferenceDatumName",
' ' "SourceMapScaleNumber",
'blank' "ReferencePointText",
' ' "DataCollectionDate",
'blank' "GeometricTypeName",
'blank' "LocationCommentsText",

```

```

'blank' "VerticalCollectionMethodText",
'blank' "VerticalMeasure",
'' "VerticalAccuracyMeasure",
'blank' "VerticalReferenceDatumName",
'blank' "DataSourceName",
'blank' "CoordinateDataSourceName",
'blank' "SubEntityIdentifier",
'blank' "SubEntityType"
      FROM DES_MASTER, onestop_geo
      WHERE DES_MASTER_ID = v_site_id
        and DES_MASTER_ID = onestop_geo.master_id(+);
end;
/* ***** Number 9 *****/
procedure getfacilitybyid9(v_site_id in char, v_fed_fac_id in char, result9 out
byid)
as
begin
open result9 for
SELECT
'blank' "stateFacilitySystemAcronymName",
DES_MASTER_ID"stateFacilityIdentifier",
'blank' "InformationSystemAcronymName",
'blank' "InformationSystemIdentifier",
'blank' "EnvironmentalInterestTypeText",
'blank' "AffiliationTypeText",
'blank' "AffiliationStartDate",
'blank' "AffiliationEndDate",
'blank' "EmailAddressText",
'blank' "TelephoneNumber",
'blank' "FaxNumber",
'blank' "AlternateTelephoneNumber",
'blank' "OrganizationFormalName",
'' "OrganizationDUNSNumber",
'blank' "OrganizationTypeText",
'blank' "EmployerIdentifier",
'blank' "StateBusinessIdentifier",
'blank' "UltimateParentName",
'blank' "UltimateParentDUNSNumber",
DES_MASTER_ADDRESS_1"MailingAddressText",
DES_MASTER_ADDRESS_2"SupplementalAddressText",
DES_MASTER_TOWN"MailingAddressCityName",
'NH' "MailingAddressStateUSPSCode",
'NEW HAMPSHIRE' "MailingAddressStateName",
'UNITED STATES' "MailingAddressCountryName",
decode(zipcode,NULL,'blank',zipcode)"MailingAddressZIPCode",
'blank' "DataSourceName",
TO_CHAR(DES_MASTER_MOD_DATE,'YYYY-MM-DD')"LastReportedDate"
      FROM DES_MASTER, onestop_zipcode
      WHERE DES_MASTER_ID = v_site_id
        and DES_MASTER_TOWN = onestop_zipcode.town(+);
end;

```

Appendix 6. Example of an XML Document (Node Instance)

Highlight 1 is an example of an instance document. An instance document shows data within the Schema it is being validated against. In this example, Highlight 1 shows Utah's data within the abbreviated facility Schema used for service request *By Parameter*. This data was retrieved from Utah's node via the Java test application that requested *By Parameter* information specific to the Air Program Environmental Interest. The data is the bolded text between the data element tag names. For instance, <FacilitySiteName> **Genesis Petroleum Inc**</FacilitySiteName>, <FacilitySiteName> is the XML data element's opening tag, **Genesis Petroleum Inc** is the data, and </FacilitySiteName> is the XML data element ending tag. Furthermore, xsi:noNamespaceSchemaLocation= "<http://www.metadata.epa.nist.gov/Repository/1C573AF4-C3C5-11D5-B450-00902785F81.xsd>" represents the designated URL to retrieve the abbreviated facility Schema from the Registry. In the future, Schema URLs will be more intuitive to the user.

Highlight 1: Example of an Instance Document

```

- <FacilitySiteList xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="http://www.metadata.epa.nist.gov/Repo
  sitory/1C573AF4-C3C5-11D5-B450-00902785F81.xsd">
- <AbbreviatedFacilitySite StateFacilityIdentifier="490000000141">
  <FacilitySiteName>GENESIS PETROLEUM INC</FacilitySiteName>
  <StateUSPSCode>UT</StateUSPSCode>
  <LocalityName>WOODS CROSS</LocalityName>
  <LocationZIPCode>840872301</LocationZIPCode>
  <FacilityRegistryIdentifier>blank</FacilityRegistryIdentifier>
  <EnvironmentalInterestType>Air
    Programs</EnvironmentalInterestType>
  </AbbreviatedFacilitySite>
- <AbbreviatedFacilitySite StateFacilityIdentifier="490000000301">
  <FacilitySiteName>SALT LAKE MEMORIAL MAUSOLEUM &
    MORTUARY</FacilitySiteName>
  <StateUSPSCode>UT</StateUSPSCode>
  <LocalityName>SALT LAKE CITY</LocalityName>
  <LocationZIPCode>841034247</LocationZIPCode>
  <FacilityRegistryIdentifier>blank</FacilityRegistryIdentifier>
  <EnvironmentalInterestType>Air
    Programs</EnvironmentalInterestType>
  </AbbreviatedFacilitySite>
- <AbbreviatedFacilitySite StateFacilityIdentifier="490000000302">
  <FacilitySiteName>3 - D SAND AND GRAVEL</FacilitySiteName>
  <StateUSPSCode>UT</StateUSPSCode>
  <LocalityName>HELPER</LocalityName>
  <LocationZIPCode>845261426</LocationZIPCode>
  <FacilityRegistryIdentifier>blank</FacilityRegistryIdentifier>
  <EnvironmentalInterestType>Air
    Programs</EnvironmentalInterestType>
  </AbbreviatedFacilitySite>
</FacilitySiteList>

```

Appendix 7. Service Request and Response Schemas for Validation (Beta Schemas)

The following twelve Schemas were used during the Beta Phase, which include eleven service response Schemas and one service request Schema. The service request Schema is a template for the service requests to be validated against, while the service response Schemas are templates for the requested data to be validated against. The service request schema used is the node service request. The service response schemas used for the three service requests are: *By Change Date*, *By Parameter*, *By ID*.

The Beta Phase used the following service request schemas to validate the data requested:

By Change Date - facility site, environmental interest, alternative name, mailing address, SIC code, NAIC code, individual, organization, geographic coordinates Schemas.

By Parameter - abbreviated facility Schema.

By ID - consolidated (hierarchical) facility Schema.

Component Facility Service Response: Facility Site

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <xsd:annotation>
    <xsd:appinfo>FacilitySiteList_v_1.0.xsd v1.0 2001-02 </xsd:appinfo>
    <xsd:documentation>
      Facility Site schema for Data transfer.
      Date format is YYYY-MM-DD.
    </xsd:documentation>
  </xsd:annotation>
  <xsd:element name="FacilitySiteList">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element ref="FacilitySiteDetails" maxOccurs="unbounded"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="FacilitySiteDetails">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element name="FacilityRegistryIdentifier" type="xsd:string" minOccurs="0"/>
        <xsd:element name="FacilitySiteName" type="xsd:string"/>
        <xsd:element name="LocationAddressText" type="xsd:string" minOccurs="0"/>
        <xsd:element name="SupplementalLocationText" type="xsd:string" minOccurs="0"/>
        <xsd:element name="LocalityName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="CountyStateFIPSCode" type="FIPSCodeDataType" minOccurs="0"/>
        <xsd:element name="CountyName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="StateUSPSCode" type="StateCodeDataType"/>
        <xsd:element name="StateName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="CountryName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="LocationZIPCode" type="xsd:string" minOccurs="0"/>
        <xsd:element name="LocationDescriptionText" type="xsd:string" minOccurs="0"/>
        <xsd:element name="FacilitySiteTypeName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="FederalFacilityIndicator" type="YesNoIndicatorDataType" minOccurs="0"/>
        <xsd:element name="TribalLandIndicator" type="YesNoIndicatorDataType" minOccurs="0"/>
        <xsd:element name="TribalLandName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="CongressionalDistrictNumber" type="DistrictDataType" minOccurs="0"/>
        <xsd:element name="LegislativeDistrictNumber" type="DistrictDataType" minOccurs="0"/>
        <xsd:element name="HUCCode" type="HUCCodeDataType" minOccurs="0"/>
        <xsd:element name="DataSourceName" type="xsd:string" minOccurs="0"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
</xsd:schema>
```

```

        <xsd:element name="LastReportedDate" type="xsd:date" minOccurs="0"/>
    </xsd:sequence>
    <xsd:attribute name="stateFacilitySystemAcronymName" type="xsd:string" use="required"/>
    <xsd:attribute name="stateFacilityIdentifier" type="xsd:string" use="required"/>
</xsd:complexType>
</xsd:element>
<xsd:simpleType name="StateCodeDataType">
    <xsd:restriction base="xsd:string">
        <xsd:length value="2"/>
        <xsd:pattern value="[A-Z]{2}"/>
    </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="FIPSCodeDataType">
    <xsd:restriction base="xsd:string">
        <xsd:length value="5"/>
        <xsd:pattern value="[0-9]{5}"/>
    </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="YesNoIndicatorDataType">
    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="Y"/>
        <xsd:enumeration value="N"/>
    </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="DistrictDataType">
    <xsd:restriction base="xsd:string">
        <xsd:length value="2"/>
        <xsd:pattern value="[0-9]{2}"/>
    </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="HUCCodeDataType">
    <xsd:restriction base="xsd:string">
        <xsd:length value="8"/>
        <xsd:pattern value="[0-9]{8}"/>
    </xsd:restriction>
</xsd:simpleType>
</xsd:schema>

```

Component Facility Service Response: Environmental Interest

```

<?xml version="1.0" encoding="utf-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <xsd:annotation>
        <xsd:appinfo>EnvironmentalInterestList_v_1.0.xsd v1.0 2001-02 </xsd:appinfo>
        <xsd:documentation>
            Environmental Interest schema for Data transfer.
            Date format is YYYY-MM-DD.
        </xsd:documentation>
    </xsd:annotation>
    <xsd:element name="EnvironmentalInterestList">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="EnvironmentalInterestDetails" maxOccurs="unbounded"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="EnvironmentalInterestDetails">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element name="InformationSystemAcronymName" type="xsd:string" minOccurs="0"/>
                <xsd:element name="InformationSystemIdentifier" type="xsd:string" minOccurs="0"/>
                <xsd:element name="EnvironmentalInterestTypeText" type="xsd:string"/>
                <xsd:element name="FederalStateInterestIndicator" type="FederalStateIndicatorDataType" minOccurs="0"/>
                <xsd:element name="EnvironmentalInterestStartDate" type="xsd:date" minOccurs="0"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
</xsd:schema>

```

```

<xsd:element name="InterestStartDateQualifierText" type="xsd:string" minOccurs="0"/>
<xsd:element name="EnvironmentalInterestEndDate" type="xsd:date" minOccurs="0"/>
<xsd:element name="InterestEndDateQualifierText" type="xsd:string" minOccurs="0"/>
<xsd:element name="DataSourceName" type="xsd:string" minOccurs="0"/>
<xsd:element name="LastReportedDate" type="xsd:date" minOccurs="0"/>
</xsd:sequence>
<xsd:attribute name="stateFacilitySystemAcronymName" type="xsd:string" use="required"/>
<xsd:attribute name="stateFacilityIdentifier" type="xsd:string" use="required"/>
</xsd:complexType>
</xsd:element>
<xsd:simpleType name="FederalStateIndicatorDataType">
    <xsd:annotation>
        <xsd:documentation>
F stands for FEDERAL and S stands for STATE.
</xsd:documentation>
        </xsd:annotation>
        <xsd:restriction base="xsd:string">
            <xsd:enumeration value="F"/>
                <xsd:enumeration value="S"/>
            </xsd:restriction>
        </xsd:simpleType>
</xsd:schema>

```

Component Facility Service Response: Alternative Name

```

<?xml version="1.0" encoding="utf-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <xsd:annotation>
        <xsd:appinfo>AlternativeNameList_v_1.0.xsd v1.0 2001-02 </xsd:appinfo>
        <xsd:documentation>
            Alternate Names schema for Data transfer.
            Date format is YYYY-MM-DD.
        </xsd:documentation>
    </xsd:annotation>
    <xsd:element name="AlternativeNameList">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="AlternativeNameDetails" maxOccurs="unbounded"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="AlternativeNameDetails">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element name="AlternativeName" type="xsd:string"/>
                <xsd:element name="AlternativeNameTypeText" type="xsd:string" minOccurs="0"/>
                <xsd:element name="DataSourceName" type="xsd:string" minOccurs="0"/>
                <xsd:element name="LastReportedDate" type="xsd:date" minOccurs="0"/>
            </xsd:sequence>
            <xsd:attribute name="stateFacilitySystemAcronymName" type="xsd:string" use="required"/>
            <xsd:attribute name="stateFacilityIdentifier" type="xsd:string" use="required"/>
        </xsd:complexType>
    </xsd:element>
</xsd:schema>

```

Component Facility Service Response: Mailing Address

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <xsd:annotation>
    <xsd:appinfo>MailingAddressList_v_1.0.xsd v1.0 2001-02 </xsd:appinfo>
    <xsd:documentation>
      Mailing Address schema for Data transfer.
      Date format is YYYY-MM-DD.
    </xsd:documentation>
  </xsd:annotation>
  <xsd:element name="MailingAddressList">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element ref="MailingAddressDetails" maxOccurs="unbounded"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="MailingAddressDetails">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element name="AffiliationTypeText" type="xsd:string"/>
        <xsd:element name="MailingAddressText" type="xsd:string" minOccurs="0"/>
        <xsd:element name="SupplementalAddressText" type="xsd:string" minOccurs="0"/>
        <xsd:element name="MailingAddressCityName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="MailingAddressStateUSPSCode" type="StateCodeDataType" minOccurs="0"/>
        <xsd:element name="MailingAddressStateName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="MailingAddressCountryName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="MailingAddressZIPCode" type="xsd:string" minOccurs="0"/>
        <xsd:element name="DataSourceName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="LastReportedDate" type="xsd:date" minOccurs="0"/>
      </xsd:sequence>
      <xsd:attribute name="stateFacilitySystemAcronymName" type="xsd:string" use="required"/>
      <xsd:attribute name="stateFacilityIdentifier" type="xsd:string" use="required"/>
    </xsd:complexType>
  </xsd:element>
  <xsd:simpleType name="StateCodeDataType">
    <xsd:restriction base="xsd:string">
      <xsd:length value="2"/>
      <xsd:pattern value="[A-Z]{2}"/>
    </xsd:restriction>
  </xsd:simpleType>
</xsd:schema>
```

Component Facility Service Response: SIC Code

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <xsd:annotation>
    <xsd:appinfo>SICCodeList_v_1.0.xsd v1.0 2001-02 </xsd:appinfo>
    <xsd:documentation>
      SIC Code schema for Data transfer.
      Date format is YYYY-MM-DD.
    </xsd:documentation>
  </xsd:annotation>
  <xsd:element name="SICCodeList">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element ref="SICCodeDetails" maxOccurs="unbounded"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="SICCodeDetails">
    <xsd:complexType>
```

```

<xsd:sequence>
    <xsd:element name="InformationSystemAcronymName" type="xsd:string" minOccurs="0"/>
    <xsd:element name="InformationSystemIdentifier" type="xsd:string" minOccurs="0"/>
    <xsd:element name="EnvironmentalInterestTypeText" type="xsd:string" minOccurs="0"/>
    <xsd:element name="SICCode" type="SICCodeDataType"/>
    <xsd:element name="SICPrimaryIndicator" type="PrimaryIndicatorDataType" minOccurs="0"/>
    <xsd:element name="DataSourceName" type="xsd:string" minOccurs="0"/>
    <xsd:element name="LastReportedDate" type="xsd:date" minOccurs="0"/>
</xsd:sequence>
<xsd:attribute name="stateFacilitySystemAcronymName" type="xsd:string" use="required"/>
<xsd:attribute name="stateFacilityIdentifier" type="xsd:string" use="required"/>
</xsd:complexType>
</xsd:element>
<xsd:simpleType name="PrimaryIndicatorDataType">
    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="PRIMARY"/>
        <xsd:enumeration value="SECONDARY"/>
        <xsd:enumeration value="UNKNOWN"/>
    </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="SICCodeDataType">
    <xsd:restriction base="xsd:string">
        <xsd:length value="4"/>
        <xsd:pattern value="[0-9]{4}"/>
    </xsd:restriction>
</xsd:simpleType>
</xsd:schema>

```

Component Facility Service Response: NAICS Code

```

<?xml version="1.0" encoding="utf-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <xsd:annotation>
        <xsd:appinfo>NAICSCodeList_v_1.0.xsd v1.0 2001-02 </xsd:appinfo>
        <xsd:documentation>
            NAICS Code schema for Data transfer.
            Date format is YYYY-MM-DD.
        </xsd:documentation>
    </xsd:annotation>
    <xsd:element name="NAICSCodeList">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="NAICSCodeDetails" maxOccurs="unbounded"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="NAICSCodeDetails">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element name="InformationSystemAcronymName" type="xsd:string" minOccurs="0"/>
                <xsd:element name="InformationSystemIdentifier" type="xsd:string" minOccurs="0"/>
                <xsd:element name="EnvironmentalInterestTypeText" type="xsd:string" minOccurs="0"/>
                <xsd:element name="NAICSCode" type="NAICSCodeDataType"/>
                <xsd:element name="NAICSPrimaryIndicator" type="PrimaryIndicatorDataType" minOccurs="0"/>
                <xsd:element name="DataSourceName" type="xsd:string" minOccurs="0"/>
                <xsd:element name="LastReportedDate" type="xsd:date" minOccurs="0"/>
            </xsd:sequence>
            <xsd:attribute name="stateFacilitySystemAcronymName" type="xsd:string" use="required"/>
            <xsd:attribute name="stateFacilityIdentifier" type="xsd:string" use="required"/>
        </xsd:complexType>
    </xsd:element>
    <xsd:simpleType name="PrimaryIndicatorDataType">
        <xsd:restriction base="xsd:string">
            <xsd:enumeration value="PRIMARY"/>
            <xsd:enumeration value="SECONDARY"/>

```

```

        <xsd:enumeration value="UNKNOWN"/>
    </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="NAICSCodeDataType">
    <xsd:restriction base="xsd:string">
        <xsd:length value="6"/>
        <xsd:pattern value="[0-9]{6}"/>
    </xsd:restriction>
</xsd:simpleType>
</xsd:schema>

```

Component Facility Service Response: Individual

```

<?xml version="1.0" encoding="utf-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <xsd:annotation>
        <xsd:appinfo>IndividualList_v_1.0.xsd v1.0 2001-02 </xsd:appinfo>
        <xsd:documentation>
            Individual schema for Data transfer.
            Date format is YYYY-MM-DD.
        </xsd:documentation>
    </xsd:annotation>
    <xsd:element name="IndividualList">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="IndividualDetails" maxOccurs="unbounded"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="IndividualDetails">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element name="InformationSystemAcronymName" type="xsd:string" minOccurs="0"/>
                <xsd:element name="InformationSystemIdentifier" type="xsd:string" minOccurs="0"/>
                <xsd:element name="EnvironmentalInterestTypeText" type="xsd:string" minOccurs="0"/>
                <xsd:element name="AffiliationTypeText" type="xsd:string"/>
                <xsd:element name="AffiliationStartDate" type="xsd:date" minOccurs="0"/>
                <xsd:element name="AffiliationEndDate" type="xsd:date" minOccurs="0"/>
                <xsd:element name="EmailAddressText" type="xsd:string" minOccurs="0"/>
                <xsd:element name="TelephoneNumber" type="xsd:string" minOccurs="0"/>
                <xsd:element name="FaxNumber" type="xsd:string" minOccurs="0"/>
                <xsd:element name="AlternateTelephoneNumber" type="xsd:string" minOccurs="0"/>
                <xsd:element name="IndividualFullName" type="xsd:string" minOccurs="0"/>
                <xsd:element name="IndividualTitleText" type="xsd:string" minOccurs="0"/>
                <xsd:element name="MailingAddressText" type="xsd:string" minOccurs="0"/>
                <xsd:element name="SupplementalAddressText" type="xsd:string" minOccurs="0"/>
                <xsd:element name="MailingAddressCityName" type="xsd:string" minOccurs="0"/>
                <xsd:element name="MailingAddressStateUSPSCode" type="StateCodeDataType" minOccurs="0"/>
                <xsd:element name="MailingAddressStateName" type="xsd:string" minOccurs="0"/>
                <xsd:element name="MailingAddressCountryName" type="xsd:string" minOccurs="0"/>
                <xsd:element name="MailingAddressZIPCode" type="xsd:string" minOccurs="0"/>
                <xsd:element name="DataSourceName" type="xsd:string" minOccurs="0"/>
                <xsd:element name="LastReportedDate" type="xsd:date" minOccurs="0"/>
            </xsd:sequence>
            <xsd:attribute name="stateFacilitySystemAcronymName" type="xsd:string" use="required"/>
            <xsd:attribute name="stateFacilityIdentifier" type="xsd:string" use="required"/>
        </xsd:complexType>
    </xsd:element>
    <xsd:simpleType name="StateCodeDataType">
        <xsd:restriction base="xsd:string">
            <xsd:length value="2"/>
            <xsd:pattern value="[A-Z]{2}"/>
        </xsd:restriction>
    </xsd:simpleType>
</xsd:schema>

```

Component Facility Service Response: Organization

```

<?xml version="1.0" encoding="utf-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <xsd:annotation>
    <xsd:appinfo>OrganizationList_v_1.0.xsd v1.0 2001-02 </xsd:appinfo>
    <xsd:documentation>
      Organization schema for Data transfer.
      Date format is YYYY-MM-DD.
    </xsd:documentation>
  </xsd:annotation>
  <xsd:element name="OrganizationList">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element ref="OrganizationDetails" maxOccurs="unbounded"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="OrganizationDetails">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element name="InformationSystemAcronymName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="InformationSystemIdentifier" type="xsd:string" minOccurs="0"/>
        <xsd:element name="EnvironmentalInterestTypeText" type="xsd:string" minOccurs="0"/>
        <xsd:element name="AffiliationTypeText" type="xsd:string"/>
        <xsd:element name="AffiliationStartDate" type="xsd:date" minOccurs="0"/>
        <xsd:element name="AffiliationEndDate" type="xsd:date" minOccurs="0"/>
        <xsd:element name="EmailAddressText" type="xsd:string" minOccurs="0"/>
        <xsd:element name="TelephoneNumber" type="xsd:string" minOccurs="0"/>
        <xsd:element name="FaxNumber" type="xsd:string" minOccurs="0"/>
        <xsd:element name="AlternateTelephoneNumber" type="xsd:string" minOccurs="0"/>
        <xsd:element name="OrganizationFormalName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="OrganizationDUNSNumber" type="DUNSIdentifierDataType" minOccurs="0"/>
        <xsd:element name="OrganizationTypeText" type="xsd:string" minOccurs="0"/>
        <xsd:element name="EmployerIdentifier" type="xsd:string" minOccurs="0"/>
        <xsd:element name="StateBusinessIdentifier" type="xsd:string" minOccurs="0"/>
        <xsd:element name="UltimateParentName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="UltimateParentDUNSNumber" type="DUNSIdentifierDataType" minOccurs="0"/>
        <xsd:element name="MailingAddressText" type="xsd:string" minOccurs="0"/>
        <xsd:element name="SupplementalAddressText" type="xsd:string" minOccurs="0"/>
        <xsd:element name="MailingAddressCityName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="MailingAddressStateUSPSCode" type="StateCodeDataType" minOccurs="0"/>
        <xsd:element name="MailingAddressStateName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="MailingAddressCountryName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="MailingAddressZIPCode" type="xsd:string" minOccurs="0"/>
        <xsd:element name="DataSourceName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="LastReportedDate" type="xsd:date" minOccurs="0"/>
      </xsd:sequence>
      <xsd:attribute name="stateFacilitySystemAcronymName" type="xsd:string" use="required"/>
      <xsd:attribute name="stateFacilityIdentifier" type="xsd:string" use="required"/>
    </xsd:complexType>
  </xsd:element>
  <xsd:simpleType name="StateCodeDataType">
    <xsd:restriction base="xsd:string">
      <xsd:length value="2"/>
      <xsd:pattern value="[A-Z]{2}"/>
    </xsd:restriction>
  </xsd:simpleType>
  <xsd:simpleType name="DUNSIdentifierDataType">
    <xsd:restriction base="xsd:string">
      <xsd:length value="9"/>
      <xsd:pattern value="[0-9]{9}"/>
    </xsd:restriction>
  </xsd:simpleType>
</xsd:schema>

```

```
</xsd:schema>
```

Component Facility Service Response: Geographic Coordinate

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <xsd:annotation>
    <xsd:appinfo>GeographicCoordinatesList_v_1.0.xsd v1.0 2001-02 </xsd:appinfo>
    <xsd:documentation>
      Locational Reference schema for Data transfer.
      Date format is YYYY-MM-DD.
    </xsd:documentation>
  </xsd:annotation>
  <xsd:element name="GeographicCoordinatesList">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element ref="GeographicCoordinateDetails" maxOccurs="unbounded"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="GeographicCoordinateDetails">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element name="LatitudeMeasure" type="LatitudeDataType"/>
        <xsd:element name="LongitudeMeasure" type="LongitudeDataType"/>
        <xsd:element name="HorizontalAccuracyMeasure" type="xsd:nonNegativeInteger" minOccurs="0"/>
        <xsd:element name="HorizontalCollectionMethodText" type="HorizontalMethodDataType"
          minOccurs="0"/>
        <xsd:element name="HorizontalReferenceDatumName" type="HorizontalDatumDataType"
          minOccurs="0"/>
        <xsd:element name="SourceMapScaleNumber" type="xsd:nonNegativeInteger" minOccurs="0"/>
        <xsd:element name="ReferencePointText" type="ReferencePointDataType" minOccurs="0"/>
        <xsd:element name="DataCollectionDate" type="xsd:date" minOccurs="0"/>
        <xsd:element name="GeometricTypeName" type="GeometricDataType" minOccurs="0"/>
        <xsd:element name="LocationCommentsText" type="xsd:string" minOccurs="0"/>
        <xsd:element name="VerticalCollectionMethodText" type="VerticalMethodDataType" minOccurs="0"/>
        <xsd:element name="VerticalMeasure" type="VerticalMeasureDataType" minOccurs="0"/>
        <xsd:element name="VerticalAccuracyMeasure" type="xsd:nonNegativeInteger" minOccurs="0"/>
        <xsd:element name="VerticalReferenceDatumName" type="VerticalDatumDataType" minOccurs="0"/>
        <xsd:element name="DataSourceName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="CoordinateDataSourceName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="SubEntityIdentifier" type="xsd:string" minOccurs="0"/>
        <xsd:element name="SubEntityType" type="SubEntityDataType" minOccurs="0"/>
      </xsd:sequence>
      <xsd:attribute name="stateFacilitySystemAcronymName" type="xsd:string" use="required"/>
      <xsd:attribute name="stateFacilityIdentifier" type="xsd:string" use="required"/>
    </xsd:complexType>
  </xsd:element>
  <xsd:simpleType name="LatitudeDataType">
    <xsd:restriction base="xsd:decimal">
      <xsd:totalDigits value="9"/>
      <xsd:fractionDigits value="6"/>
    </xsd:restriction>
  </xsd:simpleType>
  <xsd:simpleType name="LongitudeDataType">
    <xsd:restriction base="xsd:decimal">
      <xsd:totalDigits value="10"/>
      <xsd:fractionDigits value="6"/>
    </xsd:restriction>
  </xsd:simpleType>
  <xsd:simpleType name="VerticalMeasureDataType">
    <xsd:restriction base="xsd:decimal">
      <xsd:totalDigits value="10"/>
    </xsd:restriction>
  </xsd:simpleType>
</xsd:schema>
```

```

<xsd:simpleType name="HorizontalMethodDataType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="ADDRESS MATCHING-BLOCK FACE"/>
    <xsd:enumeration value="ADDRESS MATCHING-DIGITIZED"/>
    <xsd:enumeration value="ADDRESS MATCHING-HOUSE NUMBER"/>
    <xsd:enumeration value="ADDRESS MATCHING-NEAREST INTERSECTION"/>
    <xsd:enumeration value="ADDRESS MATCHING-OTHER"/>
    <xsd:enumeration value="ADDRESS MATCHING-PRIMARY NAME"/>
    <xsd:enumeration value="ADDRESS MATCHING-STREET CENTERLINE"/>
    <xsd:enumeration value="CENSUS BLOCK/GROUP-1990-CENTROID"/>
    <xsd:enumeration value="CENSUS BLOCK/TRACT-1990-CENTROID"/>
    <xsd:enumeration value="CENSUS BLOCK-1990-CENTROID"/>
    <xsd:enumeration value="CENSUS-OTHER"/>
    <xsd:enumeration value="CLASSICAL SURVEYING TECHNIQUES"/>
    <xsd:enumeration value="GPS - UNSPECIFIED"/>
    <xsd:enumeration value="GPS CARRIER PHASE KINEMATIC RELATIVE POSITION"/>
    <xsd:enumeration value="GPS CARRIER PHASE STATIC RELATIVE POSITION"/>
    <xsd:enumeration value="GPS CODE (PSEUDO RANGE) DIFFERENTIAL"/>
    <xsd:enumeration value="GPS CODE (PSEUDO RANGE) PRECISE POSITION"/>
    <xsd:enumeration value="GPS CODE (PSEUDO RANGE) STANDARD POSITION (SA OFF)"/>
    <xsd:enumeration value="GPS CODE (PSEUDO RANGE) STANDARD POSITION (SA ON)"/>
    <xsd:enumeration value="GPS, WITH CANADIAN ACTIVE CONTROL SYSTEM"/>
    <xsd:enumeration value="INTERPOLATION - DIGITAL MAP SRCE (TIGER)"/>
    <xsd:enumeration value="INTERPOLATION - SPOT"/>
    <xsd:enumeration value="INTERPOLATION -MSS"/>
    <xsd:enumeration value="INTERPOLATION -TM"/>
    <xsd:enumeration value="INTERPOLATION-MAP"/>
    <xsd:enumeration value="INTERPOLATION-OTHER"/>
    <xsd:enumeration value="INTERPOLATION-PHOTO"/>
    <xsd:enumeration value="INTERPOLATION-SATELLITE"/>
    <xsd:enumeration value="LORAN C"/>
    <xsd:enumeration value="PUBLIC LAND SURVEY - EIGHTH SECTION"/>
    <xsd:enumeration value="PUBLIC LAND SURVEY - FOOTING"/>
    <xsd:enumeration value="PUBLIC LAND SURVEY - SIXTEENTH SECTION"/>
    <xsd:enumeration value="PUBLIC LAND SURVEY-QUARTER SECTION"/>
    <xsd:enumeration value="PUBLIC LAND SURVEY-SECTION"/>
    <xsd:enumeration value="UNKNOWN"/>
    <xsd:enumeration value="ZIP CODE-CENTROID"/>
    <xsd:enumeration value="ZIP+2 CENTROID"/>
    <xsd:enumeration value="ZIP+4 CENTROID"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="HorizontalDatumDataType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="NAD27"/>
    <xsd:enumeration value="NAD83"/>
    <xsd:enumeration value="WGS84"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="ReferencePointDataType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="UNKNOWN"/>
    <xsd:enumeration value="PLANT ENTRANCE (GENERAL)"/>
    <xsd:enumeration value="OTHER"/>
    <xsd:enumeration value="PLANT ENTRANCE (PERSONNEL)"/>
    <xsd:enumeration value="PLANT ENTRANCE (FREIGHT)"/>
    <xsd:enumeration value="AIR RELEASE STACK"/>
    <xsd:enumeration value="AIR RELEASE VENT"/>
    <xsd:enumeration value="STORAGE TANK"/>
    <xsd:enumeration value="WATER RELEASE PIPE"/>
    <xsd:enumeration value="LAGOON OR SETTLING POND"/>
    <xsd:enumeration value="LIQUID WASTE TREATMENT UNIT"/>
    <xsd:enumeration value="ATMOSPHERIC EMISSIONS TREATMENT UNIT"/>
    <xsd:enumeration value="SOLID WASTE TREATMENT/DISP. UNIT"/>
    <xsd:enumeration value="SOLID WASTE STORAGE AREA"/>
    <xsd:enumeration value="LOADING FACILITY"/>
  </xsd:restriction>
</xsd:simpleType>

```

```

<xsd:enumeration value="LOADING AREA CENTROID"/>
<xsd:enumeration value="PROCESS UNIT"/>
<xsd:enumeration value="PROCESS UNIT AREA CENTROID"/>
<xsd:enumeration value="ADMINISTRATIVE BUILDING"/>
<xsd:enumeration value="FACILITY CENTROID"/>
<xsd:enumeration value="NE CORNER OF LAND PARCEL"/>
<xsd:enumeration value="SE CORNER OF LAND PARCEL"/>
<xsd:enumeration value="NW CORNER OF LAND PARCEL"/>
<xsd:enumeration value="SW CORNER OF LAND PARCEL"/>
<xsd:enumeration value="CENTER OF FACILITY"/>
<xsd:enumeration value="WELLHEAD PROTECTION AREA"/>
<xsd:enumeration value="WATER MONITORING STATION"/>
<xsd:enumeration value="INTAKE PIPE"/>
<xsd:enumeration value="WELL"/>
<xsd:enumeration value="AIR MONITORING STATION"/>
<xsd:enumeration value="WATER WELL"/>
<xsd:enumeration value="SPRING"/>
<xsd:enumeration value="SOURCE WATER AREA"/>
<xsd:enumeration value="POTENTIAL CONTAMINANT SOURCE"/>
<xsd:enumeration value="SOURCE WATER PROTECTION AREA"/>
<xsd:enumeration value="SLUDGE FIELD"/>
<xsd:enumeration value="INCINERATOR"/>
<xsd:enumeration value="EMERGENCY OVERFLOW"/>
<xsd:enumeration value="COMBINED ANIMAL FEED OPERATION (CAFO)"/>
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="GeometricDataType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="POINT"/>
    <xsd:enumeration value="LINE"/>
    <xsd:enumeration value="AREA"/>
    <xsd:enumeration value="REGION"/>
    <xsd:enumeration value="ROUTE"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="VerticalMethodDataType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="GPS CARRIER PHASE STATIC RELATIVE POSITION"/>
    <xsd:enumeration value="GPS CARRIER PHASE KINEMATIC RELATIVE POSITION"/>
    <xsd:enumeration value="GPS CODE (PSEUDO RANGE) DIFFERENTIAL"/>
    <xsd:enumeration value="GPS CODE (PSEUDO RANGE) PRECISE POSITION"/>
    <xsd:enumeration value="GPS CODE (PSEUDO RANGE) STANDARD POSITION (SA OFF)"/>
    <xsd:enumeration value="GPS CODE (PSEUDO RANGE) STANDARD POSITION (SA ON)"/>
    <xsd:enumeration value="CLASSICAL SURVEYING TECHNIQUES"/>
    <xsd:enumeration value="OTHER"/>
    <xsd:enumeration value="ALTIMETRY"/>
    <xsd:enumeration value="PRECISE LEVELING-BENCH MARK"/>
    <xsd:enumeration value="LEVELING-NON BENCH MARK CONTROL POINTS"/>
    <xsd:enumeration value="TRIGONOMETRIC LEVELING"/>
    <xsd:enumeration value="PHOTOGRAMMETRIC"/>
    <xsd:enumeration value="TOPOGRAPHIC MAP INTERPOLATION"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="VerticalDatumDataType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="NAVD88"/>
    <xsd:enumeration value="NGVD29"/>
    <xsd:enumeration value="MEAN SEA-LEVEL"/>
    <xsd:enumeration value="LOCAL TIDAL DATUM"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="SubEntityDataType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="POINT OF RECORD"/>
    <xsd:enumeration value="BOUNDRY POINT"/>
    <xsd:enumeration value="SAMPLING POINT"/>
  </xsd:restriction>
</xsd:simpleType>

```

```

<xsd:enumeration value="END OF DISCHARGE POINT"/>
<xsd:enumeration value="WELL HEAD"/>
<xsd:enumeration value="TRANSECT ORIGIN"/>
<xsd:enumeration value="GRID ORIGIN"/>
<xsd:enumeration value="STACK"/>
<xsd:enumeration value="SPILLS"/>
<xsd:enumeration value="SLUDGE"/>
<xsd:enumeration value="LANDFILL"/>
<xsd:enumeration value="EMERGENCY OVERFLOW"/>
<xsd:enumeration value="INCINERATOR"/>
</xsd:restriction>
</xsd:simpleType>
</xsd:schema>

```

Abbreviated Facility Service Response

```

<?xml version="1.0" encoding="utf-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <xsd:annotation>
    <xsd:documentation>
      This is the abbreviated facility Schema for the Network Node Pilot Project - Beta phase. This is derived
      from the facility Schema that was developed for the Facility Data Action Team. This Schema has been altered
      for the Network Node Pilot Project - Beta Phase. Specifically, many data elements, simple type definitions, and
      element groupings have been removed. Facility identification data includes Site Information and Environmental
      Interestinformation.
    </xsd:documentation>
  </xsd:annotation>
  <xsd:element name="FacilitySiteList">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element ref="AbbreviatedFacilitySite" maxOccurs="unbounded"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="AbbreviatedFacilitySite">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element name="FacilitySiteName" type="xsd:string"/>
        <xsd:element name="StateUSPSCode" type="StateCodeType"/>
        <xsd:element name="LocalityName" type="xsd:string" minOccurs="0"/>
        <xsd:element name="LocationZIPCode" type="xsd:string" minOccurs="0"/>
        <xsd:element name="FacilityRegistryIdentifier" type="xsd:string" minOccurs="0"/>
        <xsd:element name="EnvironmentalInterestType" type="xsd:string" maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:attribute name="StateFacilityIdentifier" type="xsd:string" use="required"/>
    </xsd:complexType>
  </xsd:element>
  <xsd:simpleType name="StateCodeType">
    <xsd:restriction base="xsd:string">
      <xsd:length value="2"/>
      <xsd:pattern value="[A-Z]{2}"/>
    </xsd:restriction>
  </xsd:simpleType>
</xsd:schema>

```

Consolidated Facility Service Response

```

<?xml version="1.0" encoding="utf-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <xsd:annotation>
    <xsd:appinfo>FacilitySiteAll_v_1.0.xsd v1.0 2001-02 </xsd:appinfo>
    <xsd:documentation>
      Consolidated Facility Site schema version 1.
    </xsd:documentation>
  </xsd:annotation>

```

This schema describes the XML tags for sharing the core Facility Identification data between partners. Facility identification data includes Site Information, Environmental Interest information, SIC Code information, NAICS Code information, Organizational information, Individual information, Mailing Address information , Alternative Name information and Geographic coordinate information.

```

</xsd:documentation>
</xsd:annotation>
<xsd:element name="FacilitySiteList">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="FacilitySiteDetails" maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="FacilitySiteDetails">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element name="FacilityRegistryIdentifier" type="xsd:string" minOccurs="0"/>
      <xsd:element name="FacilitySiteName" type="xsd:string"/>
      <xsd:element name="LocationAddressText" type="xsd:string" minOccurs="0"/>
      <xsd:element name="SupplementalLocationText" type="xsd:string" minOccurs="0"/>
      <xsd:element name="LocalityName" type="xsd:string" minOccurs="0"/>
      <xsd:element name="CountyStateFIPSCode" type="FIPSCodeDataType" minOccurs="0"/>
      <xsd:element name="CountyName" type="xsd:string" minOccurs="0"/>
      <xsd:element name="StateUSPSCode" type="StateCodeDataType"/>
      <xsd:element name="StateName" type="xsd:string" minOccurs="0"/>
      <xsd:element name="CountryName" type="xsd:string" minOccurs="0"/>
      <xsd:element name="LocationZIPCode" type="xsd:string" minOccurs="0"/>
      <xsd:element name="LocationDescriptionText" type="xsd:string" minOccurs="0"/>
      <xsd:element name="FacilitySiteTypeName" type="xsd:string" minOccurs="0"/>
      <xsd:element name="FederalFacilityIndicator" type="YesNoIndicatorDataType" minOccurs="0"/>
      <xsd:element name="TribalLandIndicator" type="YesNoIndicatorDataType" minOccurs="0"/>
      <xsd:element name="TribalLandName" type="xsd:string" minOccurs="0"/>
      <xsd:element name="CongressionalDistrictNumber" type="DistrictDataType" minOccurs="0"/>
      <xsd:element name="LegislativeDistrictNumber" type="DistrictDataType" minOccurs="0"/>
      <xsd:element name="HUCCode" type="HUCCodeDataType" minOccurs="0"/>
      <xsd:element ref="EnvironmentalInterestDetails" maxOccurs="unbounded"/>
      <xsd:element ref="AlternativeNameDetails" minOccurs="0" maxOccurs="unbounded"/>
      <xsd:element ref="MailingAddressDetails" minOccurs="0" maxOccurs="unbounded"/>
      <xsd:element ref="SICCodeDetails" minOccurs="0" maxOccurs="unbounded"/>
      <xsd:element ref="NAICSSCodeDetails" minOccurs="0" maxOccurs="unbounded"/>
      <xsd:element ref="IndividualDetails" minOccurs="0" maxOccurs="unbounded"/>
      <xsd:element ref="OrganizationDetails" minOccurs="0" maxOccurs="unbounded"/>
      <xsd:element ref="GeographicCoordinateDetails" minOccurs="0" maxOccurs="unbounded"/>
      <xsd:element name="DataSourceName" type="xsd:string" minOccurs="0"/>
      <xsd:element name="LastReportedDate" type="xsd:date" minOccurs="0"/>
    </xsd:sequence>
    <xsd:attribute name="stateFacilitySystemAcronymName" type="xsd:string" use="required"/>
    <xsd:attribute name="stateFacilityIdentifier" type="xsd:string" use="required"/>
  </xsd:complexType>
</xsd:element>
<xsd:element name="EnvironmentalInterestDetails">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element name="InformationSystemAcronymName" type="xsd:string" minOccurs="0"/>
      <xsd:element name="InformationSystemIdentifier" type="xsd:string" minOccurs="0"/>
      <xsd:element name="EnvironmentalInterestTypeText" type="xsd:string"/>
      <xsd:element name="FederalStateInterestIndicator" type="FederalStateIndicatorDataType" minOccurs="0"/>
      <xsd:element name="EnvironmentalInterestStartDate" type="xsd:date" minOccurs="0"/>
      <xsd:element name="InterestStartDateQualifierText" type="xsd:string" minOccurs="0"/>
      <xsd:element name="EnvironmentalInterestEndDate" type="xsd:date" minOccurs="0"/>
      <xsd:element name="InterestEndDateQualifierText" type="xsd:string" minOccurs="0"/>
      <xsd:element ref="SICCodeDetails" minOccurs="0" maxOccurs="unbounded"/>
      <xsd:element ref="NAICSSCodeDetails" minOccurs="0" maxOccurs="unbounded"/>
      <xsd:element ref="IndividualDetails" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
```

```

        <xsd:element ref="OrganizationDetails" minOccurs="0" maxOccurs="unbounded"/>
        <xsd:element ref="GeographicCoordinateDetails" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="AlternativeNameDetails">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element name="AlternativeName" type="xsd:string"/>
            <xsd:element name="AlternativeNameTypeText" type="xsd:string" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="MailingAddressDetails">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element name="MailingAddressText" type="xsd:string" minOccurs="0"/>
            <xsd:element name="SupplementalAddressText" type="xsd:string" minOccurs="0"/>
            <xsd:element name="MailingAddressCityName" type="xsd:string" minOccurs="0"/>
            <xsd:element name="MailingAddressStateUSPSCode" type="StateCodeDataType" minOccurs="0"/>
            <xsd:element name="MailingAddressStateName" type="xsd:string" minOccurs="0"/>
            <xsd:element name="MailingAddressCountryName" type="xsd:string" minOccurs="0"/>
            <xsd:element name="MailingAddressZIPCode" type="xsd:string" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="SICCodeDetails">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element name="SICCode" type="SICCodeDataType"/>
            <xsd:element name="SICPrimaryIndicator" type="PrimaryIndicatorDataType" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="NAICSCodeDetails">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element name="NAICSCode" type="NAICSCodeDataType"/>
            <xsd:element name="NAICSPrimaryIndicator" type="PrimaryIndicatorDataType" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="IndividualDetails">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element name="AffiliationTypeText" type="xsd:string"/>
            <xsd:element name="AffiliationStartDate" type="xsd:date" minOccurs="0"/>
            <xsd:element name="AffiliationEndDate" type="xsd:date" minOccurs="0"/>
            <xsd:element name="EmailAddressText" type="xsd:string" minOccurs="0"/>
            <xsd:element name="TelephoneNumber" type="xsd:string" minOccurs="0"/>
            <xsd:element name="FaxNumber" type="xsd:string" minOccurs="0"/>
            <xsd:element name="AlternateTelephoneNumber" type="xsd:string" minOccurs="0"/>
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            <xsd:element name="IndividualTitleText" type="xsd:string" minOccurs="0"/>
            <xsd:element ref="MailingAddressDetails" minOccurs="0"/>
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            <xsd:element name="AffiliationEndDate" type="xsd:date" minOccurs="0"/>
            <xsd:element name="EmailAddressText" type="xsd:string" minOccurs="0"/>
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```

```

<xsd:element name="FaxNumber" type="xsd:string" minOccurs="0"/>
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<xsd:element name="UltimateParentDUNSNumber" type="DUNSIdentifierDataType" minOccurs="0"/>
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minOccurs="0"/>
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minOccurs="0"/>
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<xsd:element name="ReferencePointText" type="ReferencePointDataType" minOccurs="0"/>
<xsd:element name="DataCollectionDate" type="xsd:date" minOccurs="0"/>
<xsd:element name="GeometricTypeName" type="GeometricDataType" minOccurs="0"/>
<xsd:element name="LocationCommentsText" type="xsd:string" minOccurs="0"/>
<xsd:element name="VerticalCollectionMethodText" type="VerticalMethodDataType" minOccurs="0"/>
<xsd:element name="VerticalMeasure" type="VerticalMeasureDataType" minOccurs="0"/>
<xsd:element name="VerticalAccuracyMeasure" type="xsd:nonNegativeInteger" minOccurs="0"/>
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<xsd:restriction base="xsd:decimal">
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<xsd:enumeration value="ADDRESS MATCHING-DIGITIZED"/>
<xsd:enumeration value="ADDRESS MATCHING-HOUSE NUMBER"/>
<xsd:enumeration value="ADDRESS MATCHING-NEAREST INTERSECTION"/>
<xsd:enumeration value="ADDRESS MATCHING-OTHER"/>
<xsd:enumeration value="ADDRESS MATCHING-PRIMARY NAME"/>
<xsd:enumeration value="ADDRESS MATCHING-STREET CENTERLINE"/>
<xsd:enumeration value="CENSUS BLOCK/GROUP-1990-CENTROID"/>
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<xsd:enumeration value="CENSUS BLOCK-1990-CENTROID"/>
<xsd:enumeration value="CENSUS-OTHER"/>
<xsd:enumeration value="CLASSICAL SURVEYING TECHNIQUES"/>
<xsd:enumeration value="GPS - UNSPECIFIED"/>
<xsd:enumeration value="GPS CARRIER PHASE KINEMATIC RELATIVE POSITION"/>
<xsd:enumeration value="GPS CARRIER PHASE STATIC RELATIVE POSITION"/>
<xsd:enumeration value="GPS CODE (PSEUDO RANGE) DIFFERENTIAL"/>
<xsd:enumeration value="GPS CODE (PSEUDO RANGE) PRECISE POSITION"/>
<xsd:enumeration value="GPS CODE (PSEUDO RANGE) STANDARD POSITION (SA OFF)"/>
<xsd:enumeration value="GPS CODE (PSEUDO RANGE) STANDARD POSITION (SA ON)"/>
<xsd:enumeration value="GPS, WITH CANADIAN ACTIVE CONTROL SYSTEM"/>
<xsd:enumeration value="INTERPOLATION - DIGITAL MAP SRCE (TIGER)"/>
<xsd:enumeration value="INTERPOLATION - SPOT"/>
<xsd:enumeration value="INTERPOLATION -MSS"/>
<xsd:enumeration value="INTERPOLATION -TM"/>
<xsd:enumeration value="INTERPOLATION-MAP"/>
<xsd:enumeration value="INTERPOLATION-OTHER"/>
<xsd:enumeration value="INTERPOLATION-PHOTO"/>
<xsd:enumeration value="INTERPOLATION-SATELLITE"/>
<xsd:enumeration value="LORAN C"/>
<xsd:enumeration value="PUBLIC LAND SURVEY - EIGHTH SECTION"/>
<xsd:enumeration value="PUBLIC LAND SURVEY - FOOTING"/>
<xsd:enumeration value="PUBLIC LAND SURVEY - SIXTEENTH SECTION"/>
<xsd:enumeration value="PUBLIC LAND SURVEY-QUARTER SECTION"/>
<xsd:enumeration value="PUBLIC LAND SURVEY-SECTION"/>
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<xsd:enumeration value="ZIP+4 CENTROID"/>
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    <xsd:enumeration value="NAD27"/>
    <xsd:enumeration value="NAD83"/>
    <xsd:enumeration value="WGS84"/>
  </xsd:restriction>
</xsd:simpleType>
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  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="UNKNOWN"/>
    <xsd:enumeration value="PLANT ENTRANCE (GENERAL)"/>
    <xsd:enumeration value="OTHER"/>
    <xsd:enumeration value="PLANT ENTRANCE (PERSONNEL)"/>
    <xsd:enumeration value="PLANT ENTRANCE (FREIGHT)"/>
    <xsd:enumeration value="AIR RELEASE STACK"/>
    <xsd:enumeration value="AIR RELEASE VENT"/>
    <xsd:enumeration value="STORAGE TANK"/>
    <xsd:enumeration value="WATER RELEASE PIPE"/>
    <xsd:enumeration value="LAGOON OR SETTLING POND"/>
    <xsd:enumeration value="LIQUID WASTE TREATMENT UNIT"/>
    <xsd:enumeration value="ATMOSPHERIC EMISSIONS TREATMENT UNIT"/>
    <xsd:enumeration value="SOLID WASTE TREATMENT/DISP. UNIT"/>
    <xsd:enumeration value="SOLID WASTE STORAGE AREA"/>
    <xsd:enumeration value="LOADING FACILITY"/>
    <xsd:enumeration value="LOADING AREA CENTROID"/>
    <xsd:enumeration value="PROCESS UNIT"/>
    <xsd:enumeration value="PROCESS UNIT AREA CENTROID"/>
    <xsd:enumeration value="ADMINISTRATIVE BUILDING"/>
    <xsd:enumeration value="FACILITY CENTROID"/>
    <xsd:enumeration value="NE CORNER OF LAND PARCEL"/>
    <xsd:enumeration value="SE CORNER OF LAND PARCEL"/>
    <xsd:enumeration value="NW CORNER OF LAND PARCEL"/>
    <xsd:enumeration value="SW CORNER OF LAND PARCEL"/>
    <xsd:enumeration value="CENTER OF FACILITY"/>
    <xsd:enumeration value="WELLHEAD PROTECTION AREA"/>

```

```

<xsd:enumeration value="WATER MONITORING STATION"/>
<xsd:enumeration value="INTAKE PIPE"/>
<xsd:enumeration value="WELL"/>
<xsd:enumeration value="AIR MONITORING STATION"/>
<xsd:enumeration value="WATER WELL"/>
<xsd:enumeration value="SPRING"/>
<xsd:enumeration value="SOURCE WATER AREA"/>
<xsd:enumeration value="POTENTIAL CONTAMINANT SOURCE"/>
<xsd:enumeration value="SOURCE WATER PROTECTION AREA"/>
<xsd:enumeration value="SLUDGE FIELD"/>
<xsd:enumeration value="INCINERATOR"/>
<xsd:enumeration value="EMERGENCY OVERFLOW"/>
<xsd:enumeration value="COMBINED ANIMAL FEED OPERATION (CAFO)"/>
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="GeometricDataType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="POINT"/>
    <xsd:enumeration value="LINE"/>
    <xsd:enumeration value="AREA"/>
    <xsd:enumeration value="REGION"/>
    <xsd:enumeration value="ROUTE"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="VerticalMethodDataType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="GPS CARRIER PHASE STATIC RELATIVE POSITION"/>
    <xsd:enumeration value="GPS CARRIER PHASE KINEMATIC RELATIVE POSITION"/>
    <xsd:enumeration value="GPS CODE (PSEUDO RANGE) DIFFERENTIAL"/>
    <xsd:enumeration value="GPS CODE (PSEUDO RANGE) PRECISE POSITION"/>
    <xsd:enumeration value="GPS CODE (PSEUDO RANGE) STANDARD POSITION (SA OFF)"/>
    <xsd:enumeration value="GPS CODE (PSEUDO RANGE) STANDARD POSITION (SA ON)"/>
    <xsd:enumeration value="CLASSICAL SURVEYING TECHNIQUES"/>
    <xsd:enumeration value="OTHER"/>
    <xsd:enumeration value="ALTIMETRY"/>
    <xsd:enumeration value="PRECISE LEVELING-BENCH MARK"/>
    <xsd:enumeration value="LEVELING-NON BENCH MARK CONTROL POINTS"/>
    <xsd:enumeration value="TRIGONOMETRIC LEVELING"/>
    <xsd:enumeration value="PHOTOGRAMMETRIC"/>
    <xsd:enumeration value="TOPOGRAPHIC MAP INTERPOLATION"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="VerticalDatumDataType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="NAVD88"/>
    <xsd:enumeration value="NGVD29"/>
    <xsd:enumeration value="MEAN SEA-LEVEL"/>
    <xsd:enumeration value="LOCAL TIDAL DATUM"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="SubEntityDataType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="POINT OF RECORD"/>
    <xsd:enumeration value="BOUNDRY POINT"/>
    <xsd:enumeration value="SAMPLING POINT"/>
    <xsd:enumeration value="END OF DISCHARGE POINT"/>
    <xsd:enumeration value="WELL HEAD"/>
    <xsd:enumeration value="TRANSECT ORIGIN"/>
    <xsd:enumeration value="GRID ORIGIN"/>
    <xsd:enumeration value="STACK"/>
    <xsd:enumeration value="SPILLS"/>
    <xsd:enumeration value="SLUDGE"/>
    <xsd:enumeration value="LANDFILL"/>
    <xsd:enumeration value="EMERGENCY OVERFLOW"/>
    <xsd:enumeration value="INCINERATOR"/>
  </xsd:restriction>
</xsd:simpleType>

```

```

</xsd:simpleType>
<xsd:simpleType name="DUNSIdentifierDataType">
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        <xsd:length value="9"/>
        <xsd:pattern value="[0-9]{9}"/>
    </xsd:restriction>
</xsd:simpleType>
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    <xsd:restriction base="xsd:string">
        <xsd:length value="6"/>
        <xsd:pattern value="[0-9]{6}"/>
    </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="PrimaryIndicatorDataType">
    <xsd:restriction base="xsd:string">
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        <xsd:enumeration value="SECONDARY"/>
        <xsd:enumeration value="UNKNOWN"/>
    </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="SICCodeDataType">
    <xsd:restriction base="xsd:string">
        <xsd:length value="4"/>
        <xsd:pattern value="[0-9]{4}"/>
    </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="FederalStateIndicatorDataType">
    <xsd:annotation>
        <xsd:documentation>
F stands for FEDERAL and S stands for STATE.
</xsd:documentation>
        </xsd:annotation>
    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="F"/>
        <xsd:enumeration value="S"/>
    </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="StateCodeDataType">
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        <xsd:pattern value="[A-Z]{2}"/>
    </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="FIPSCodeDataType">
    <xsd:restriction base="xsd:string">
        <xsd:length value="5"/>
        <xsd:pattern value="[0-9]{5}"/>
    </xsd:restriction>
</xsd:simpleType>
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    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="Y"/>
        <xsd:enumeration value="N"/>
    </xsd:restriction>
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        <xsd:pattern value="[0-9]{2}"/>
    </xsd:restriction>
</xsd:simpleType>
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    <xsd:restriction base="xsd:string">
        <xsd:length value="8"/>
        <xsd:pattern value="[0-9]{8}"/>
    </xsd:restriction>

```

```
</xsd:simpleType>
</xsd:schema>
```

Node Service Request

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- edited with XML Spy v4.1 U (http://www.xmlspy.com) by Mark Nobles (LMI) -->
<xs:schema targetNamespace="http://EPACDX.LMI.ORG/NodesPilotBeta/Schema"
  xmlns="http://EPACDX.LMI.ORG/NodesPilotBeta/Schema" xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified" version="1.0">
  <xs:element name="NodesServiceRequest">
    <xs:annotation>
      <xs:documentation>
        Contains the three choices for Service requests available under the Beta phase of the Nodes pilot
      </xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:choice>
        <xs:element name="GetFacilityByChangeDate">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="AsOfChangeDate" type="xs:date"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
        <xs:element name="GetFacilityByParameter">
          <xs:complexType>
            <xs:choice>
              <xs:element name="FacilityName" nillable="false">
                <xs:simpleType>
                  <xs:restriction base="xs:string">
                    <xs:maxLength value="80"/>
                  </xs:restriction>
                </xs:simpleType>
              </xs:element>
              <xs:element name="EnvironmentalInterestType" nillable="false">
                <xs:simpleType>
                  <xs:restriction base="xs:string">
                    <xs:enumeration value="Air Programs"/>
                    <xs:enumeration value="Animal Operations"/>
                    <xs:enumeration value="Assistance Programs"/>
                    <xs:enumeration value="Chemical Release Programs"/>
                    <xs:enumeration value="Chemical Storage Programs"/>
                    <xs:enumeration value="Coastal and Ocean Programs"/>
                    <xs:enumeration value="Drinking Water Programs"/>
                    <xs:enumeration value="Legal/Enforcement Activities"/>
                    <xs:enumeration value="Ground Water Programs"/>
                    <xs:enumeration value="Hazardous Waste Programs"/>
                    <xs:enumeration value="Radiation Protection Programs"/>
                    <xs:enumeration value="Remediation Programs"/>
                    <xs:enumeration value="Solid Waste Programs"/>
                    <xs:enumeration value="Underground Storage Tank Programs"/>
                    <xs:enumeration value="Waste Water Programs"/>
                    <xs:enumeration value="XRay Certification"/>
                  </xs:restriction>
                </xs:simpleType>
              </xs:element>
            </xs:choice>
          </xs:complexType>
        </xs:element>
      </xs:choice>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

Appendix 8. Implementation Plan References

The table in this appendix and this overview are from the Network Implementation Plan. Note that the milestones in this table are all high-level goals and are meant to depict the critical paths to establishing the Network. Responsible parties are expected to create the tasks, schedules, and assignments necessary to meet these goals within the set timeframes.

The table has been organized chronologically by year: 2002, 2003 and 2004, and each year has been split into starting and ending quarters for each task. For more information on each milestone, please refer to its "primary section" in the Network Implementation Plan.

None of the milestones are "set in stone." However, the responsible parties need to adhere as closely as possible to the timelines to meet the goal of establishing the Network by 2004. Not all of the tasks will require an entire quarter to be completed – some milestones will be easily implemented in conjunction with others (i.e., designating new responsible parties to fulfill Board functions).

Table 1: Summary of Implementation Milestones by Time Period

Start Year Qtr	Start Year	End Year	End Qtr	Respon-sible Party	Milestone	Primary Section/Area*
underway	2002	Q4		Board	Develop 3 Technology Templates for State Nodes	Guiding Network Implementation and Participation
underway	2002	Q3		Board	Publish a preliminary manual on "How to establish a Network Node" (based on Node Beta Phase and work done by the "follow on" effort)	Establishing Network Nodes
underway	2002	Q1		EPA	Publish Schedule for Type 1 Flows for 2002-2003	Developing Network Flows
underway	2003	Q4		EPA	CDX ready to receive 6 Type 1 Flows, including complete linkage to the destination national system	Connecting the Network to Existing Information Systems
underway	2004	Q4		EPA	EPA's CDX Node able to receive Flows for all National Systems	Connecting the Network to Existing Information Systems
underway	2002	Q1		Node Beta Phase Group	Complete Beta Phase and all documentation, including recommendations for the Beta Phase "follow on" effort	Bringing the Pieces Together: Continuation of Network Implementation Pilots
underway	2002	Q1		Partners	Develop functioning Node prototypes for basic flows in Six Beta Phase States	Bringing the Pieces Together: Continuation of Network Implementation Pilots
2002	Q1	2002	Q1	Board	Establish a Beta Phase "follow-on" effort	Bringing the Pieces Together: Continuation of Network Implementation Pilots

Start Year	Start Qtr	End Year	End Qtr	Responsible Party	Milestone	Primary Section/Area*
2002	Q1	2002	Q3	Board	Publish Template Guidelines and Best Practices Checklist (Version 1.0)	Developing Data Exchange Templates
2002	Q1	2002	Q4	Board	Establish core Network reference model for existing and proposed standards (Version 1.0)	Implementing Data Standards
2002	Q1	2002	Q1	Board	Assign a responsible party for developing and disseminating technology trends information	Monitoring and Developing Recommendations on Network Technologies
2002	Q1	2002	Q2	Board	Designate a responsible party for overseeing registry operations, including security, coordinating registry efforts and publishing registry Guidelines	Operating and Supporting the Network Registry/Repository
2002	Q1	2002	Q4	Board	Develop and publish Network Exchange protocols (Version 1.0)	Refining the Details of the End-to-End Information Exchange Process
2002	Q2	2002	Q4	Board	Publish Trading Partner Agreement Guidelines and checklists (Version 1.0)	Defining Mutual Expectations for Specific Data Exchanges: Trading Partner Agreements
2002	Q2	2002	Q2	Board	Establish responsibility and schedule for Network security guidelines development	Ensuring Network Security
2002	Q3	2002	Q4	Board	Publish Network Node Functional Specifications (Version 1.0)	Establishing Network Nodes
2002	Q2	2002	Q3	Board (TRG)	Develop guidelines for representing data standards in Templates	Developing Data Exchange Templates
2002	Q2	2002	Q3	EPA	Develop initial internal Guidelines on roles, responsibilities, and support for Trading Partner Agreement development	Defining Mutual Expectations for Specific Data Exchanges: Trading Partner Agreements
2002	Q2	2002	Q2	EPA	Accept facility data from Beta Phase (State) Participants through EPA's Node	Developing Network Flows
2002	Q2	2002	Q4	EPA	Prototype EPA Out-Node Operational	Establishing Network Nodes
2002	Q3	2004	Q4	Partners	Make basic Nodes operational between EPA and a total of 35 Trading Partners	Bringing the Pieces Together: Cont. of Network Implementation Pilots
2002	Q1	2002	Q3	Partners/Board	Establish 4 additional Partner Nodes (through the Beta Phase "follow on" under the Board)	Bringing the Pieces Together: Continuation of Network Implementation Pilots
2002	Q3	2004	Q4	Partners/Board	Establish 25 additional Partner Nodes (through the Beta Phase "follow on" under the Board)	Bringing the Pieces Together: Continuation of Network Implementation Pilots
2003	Q1	2003	Q3	Board	Commission an independent security assessment of the Network security protocols	Ensuring Network Security

Appendix 9. Where to Find Further Information

General Network Background Materials

National Environmental Information Exchange Network Grant Program Electronic Library, <http://www.epa.gov/neengprg/library/>

Network Implementation Plan (February 2002),
<http://www.epa.gov/neengprg/library/netiplan0202.pdf>

Blueprint for a National Environmental Information Exchange Network, Rev. 3 (June 2001). <http://www.getf.org/file/wiser/1602.PDF>

National Environmental Information Exchange Network, Information Package (June 2001). http://www.epa.gov/oei/imwg/files/network_package.pdf

XML and Related Technologies

Carlson, David, Modeling XML Applications with UML, Practical e-Business Applications. Addison-Wesley, 2001.

Cauldwell, Rajesh et al., Professional XML Web Services. Wrox, 2001.

Duckett, Jon et al., Professional XML Schemas. Wrox, 2001.

Hard, E.r., and W.S. Means, XML in a Nutshell. O'Reilly, 2001.

Van der Vlist, Eric, XML.com: The Guide to W3C SML Schema. O'Reilly, 2001.

Skonnard, Aaron, and Gudgin, Martin, Essential XML Quick Reference: A Programmer's Reference to XML, Xpath, XSLT, SML Schema, SOAP, and More. Addison-Wesley, 2001.

Wyke, R. Allend, and Watt, Andrew, XML Schema Essentials. John Wiley & Sons, 2001.

For more information about XML in the Government, visit the following website at:
<http://www.xml.gov/>

Additional Resources Referenced in this Document

W3C: <http://www.w3.org/> -- The World Wide Web Consortium develops interoperable technologies (e.g., XML, SOAP, WSDL) for the Web.

OASIS: <http://www.oasis-open.org/> -- the Organization for the Advancement of Structured Information Standards, is a non-profit, international consortium that creates interoperable industry specifications based on public standards such as XML and SGML, as well as others that are related to structured information processing.

ebXML: <http://www.ebxml.org> -- Electronic Business using eXtensible Markup Language is a modular suite of specifications that enables enterprises of any size and in any geographical location to conduct business over the Internet.